

MANUFACTURERS RECORD

A Weekly Newspaper Devoted to the Industrial, Financial, Railroad,
Mining, Contracting, Engineering, Building, and General
Business Interests of the South and Southwest

Vol. 61
No. 10

ESTABLISHED 1882

\$4.00 Per Year
Single Copy 15 Cents

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to Sugar-Cane Growing.

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Centering at Memphis.

Making Available Certain Grades of
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BALTIMORE, MARCH 14, 1912

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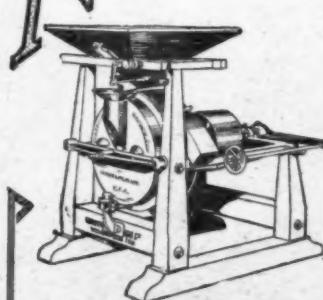


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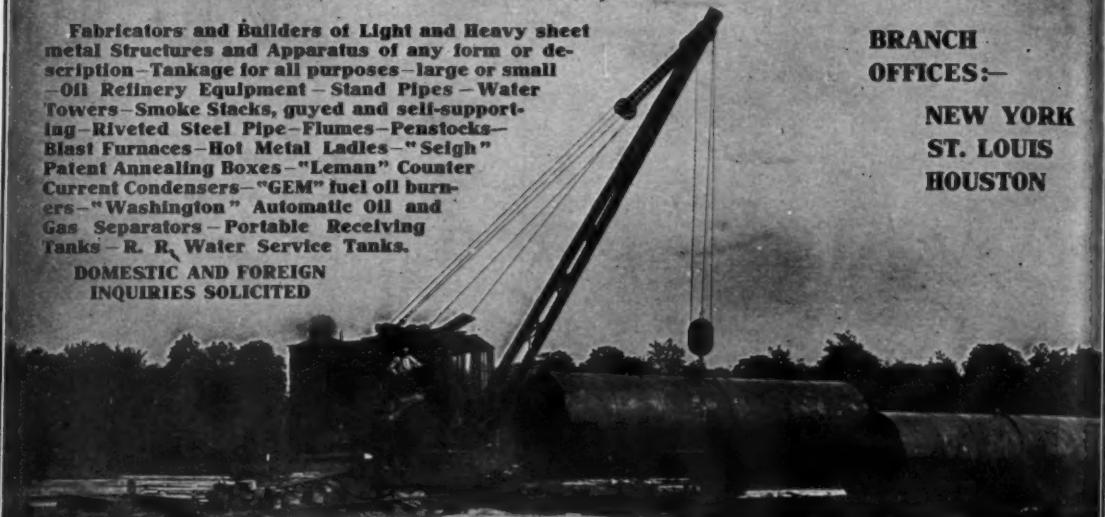
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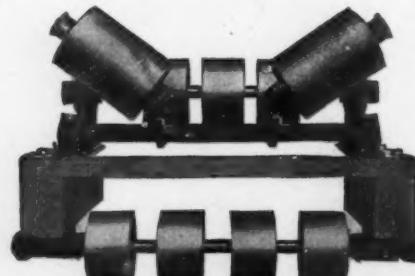


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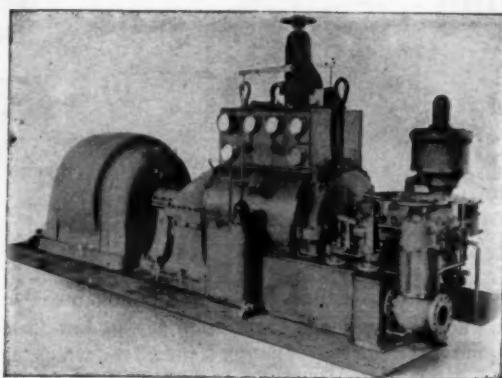
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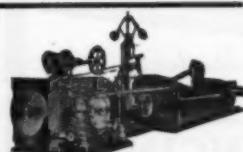
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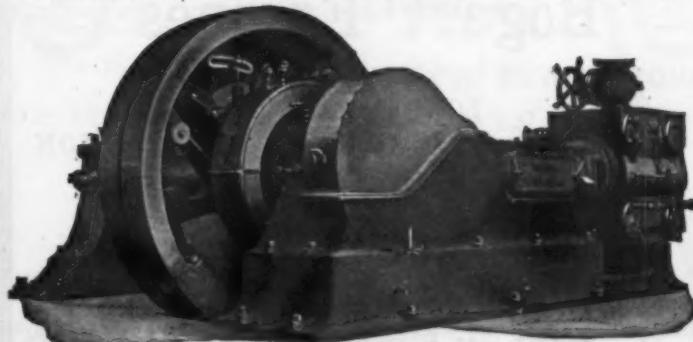
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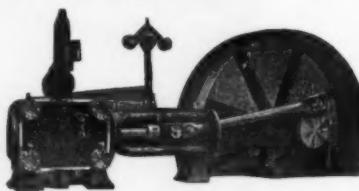
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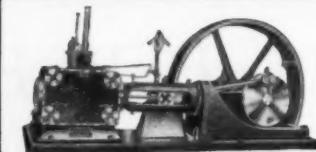
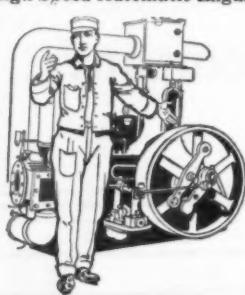
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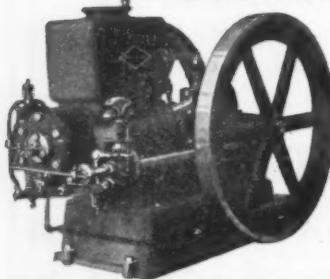
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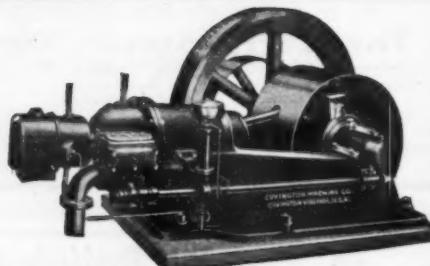
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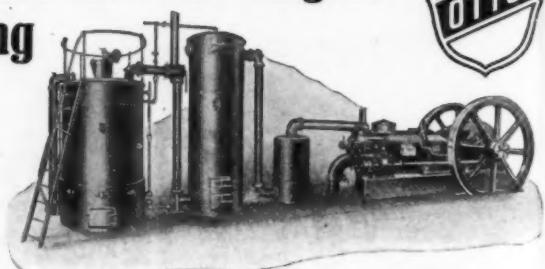


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BULLETIN 25 DESCRIBES THEM



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Write for Catalog No. 938 DR.

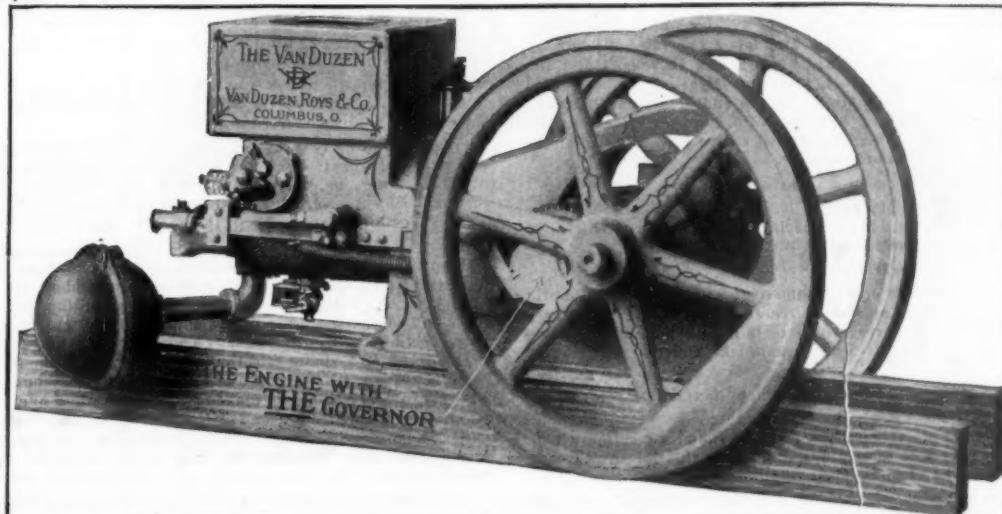
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Judge this engine from any angle

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The "Inspiration" and "Perspiration" of the Edison Storage Battery

LETTER No. 1

A successful invention is composed of one part "inspiration" and ninety-nine parts "perspiration."

—EDISON.

"Mr. Edison, what originally prompted you to take up the storage battery problem?"

This question is a natural one. It has been asked many times. Everyone seems curious to know why, at the age of fifty-five, after a life of constant application and phenomenal achievement, he deliberately plunged into the most difficult and tedious field of research and development he could have selected.

Most successful men at that age are preparing to retire and enjoy some of the emoluments resulting from a busy life. In the majority of cases, it has been a life of drudgery. Few are so fortunate as to be able to select a vocation entirely congenial. For years they have looked forward to this playtime, to which they are justly entitled.

But not so with Mr. Edison. He selected his life work when a mere boy. He suffered privation and, in some instances, hunger, in order that he might purchase the coveted wire, glass jars and chemicals for experiments.

For the first ten years he passed through an experience which would have cooled the ardor of most young men. It was slow, uphill work. Finally there came recognition, and subsequent fame and fortune.

So when he attacked this storage battery problem, his only incentive was the desire of accomplishing another task in a field which had hitherto yielded small returns for the vast amount of time and labor expended therein by others. Years before, when the first storage battery was discovered and the details published, he entered into a comprehensive investigation and conducted many experiments with various combinations of lead and acids. As a result, he was brought to a realization of the limitations of development from such a chemical reaction, and deferred further effort until such future time as might be found available. That time arrived in 1900.

This same question was asked by a prominent scientist, in a letter received some months ago. Mr. Edison replied:

"Started with the broad idea that the displacing of horse-drawn vehicles in cities would be an enormous advance.

"That the ideal vehicle is the electric.

"That the electric never could be made commercial with the lead-sulphuric acid battery which, while based on an unique reaction in chemistry, and very beautiful in theory, does not and never can fit in to meet commercial requirements of fool-proofness and longevity, because of the inherent destructive influences.

"Believed that Nature could afford one more reaction, and I started, avoiding every combination requiring acid.

"After a very large number of experiments, I at last found a reaction which, although initially very weak, was promising. I pursued this for three years, finally producing the first type of nickel-iron-alkaline battery.

"Four more years were spent in working out the mechanical problems, special processes and machines for manufacture.

"I feel fully repaid for the time, labor and money expended."

When returning from a business trip to New York in the Spring of 1900, Mr. Edison experienced considerable difficulty in reaching the Cortlandt Street Ferry, by reason of the congestion of traffic near the ferry entrance. It was before the days of the Traffic Police Squad, that arm of the Department which has brought order out of chaos.

For two hours he stood watching this conglomeration of loaded trucks, irate teamsters and fretting horses. On one of the pages of his note book he jotted down "Problem—Narrow streets. Comparatively large street area covered by a horse-drawn vehicle. Slow speed. Limited loads. Congestion. Resulting delay and expense therefrom. Depreciation excessive."

Directly under this he wrote "Solution—Electrically driven trucks, covering one-half the street area, having twice the speed, with two or three times the carrying capacity, and sufficiently rugged and practical to be operated by present teamsters. Development necessary: Running gear—easy. Motor drive—easy. Control—simple. Battery—(?)"

That interrogation point is responsible for the seven years of unremitting toil and expenditure of over two millions of dollars, before the satisfactory culmination and endorsement of the solution—the EDISON STORAGE BATTERY—by THOMAS A. EDISON.

Only one who has worked constantly side by side with Mr. Edison, who has come to him radiant in the belief of having solved a difficult problem, only to see his handiwork shattered by some crucial test which only an Edison can devise, really appreciates what it means for him to *finally approve a complete structure.*

I recall an occurrence of interest: A group of machines for stirring material immersed in a liquid did not operate satisfactorily in one of the Edison

Factories in Orange, and the entire output of the plant was being curtailed. We had purchased the best apparatus on the market to accomplish the result, but without success. Several had attempted to remedy the defect, to no avail. As a last resort, Mr. Edison was appealed to. Instant and continued action was necessary.

I was his assistant on the "job." By the time the fiftieth model was constructed, tried and found wanting, I had about made up my mind that nobody on Earth *ever has known anything* about stirring liquids. When the seventieth model was tried with like success, I was *sure* of the fact. Every available man in the Laboratory was busy making up models from the "copper plate" sketches which appeared with remarkable frequency and originality from Mr. Edison's pad. He sat in the Chemical Room, a cigar between his teeth, the floor literally covered by sheets of rejected sketches which he had prepared.

For ten days and nights the work proceeded uninterruptedly. When opportunity offered, we took little "cat naps," with the bench or floor as a bed and a coat as a pillow.

Finally an obviously excellent design appeared, was constructed, tested and *found perfect*. It transpired that this had been the third sketch he had made; but, as he expressed it afterwards, "It looked too easy. I am always afraid of anything that looks too easy, until I have tried everything else."

This was a siege of only ten days and nights. Imagine *seven years* of it—night, day, Sundays and holidays!

And so, I repeat, unless you know this man intimately, you cannot appreciate how *very excellent* the EDISON STORAGE BATTERY *must be* for him to have finally endorsed it.

I really think he is sorry he has finished this battery task, because it was a foe worthy of his steel. From first to last, aside from the special manufacturing machinery he designed and tested, over fifty thousand separate and distinct experiments were made, the results of each being carefully tabulated and resolved into curves. If all these curve sheets were placed end to end, the line would be sixteen miles long.

Meanwhile, others had encroached upon his phonograph. Upon finishing the battery task, he took up this phonograph problem where he had left it ten years ago. As a result, a new method of recording and reproducing sounds has been completed, and within a short time the public will be astonished by the perfection attained. *It marks a new epoch in music.* Even the most difficult soprano and violin selections are rendered without the least distortion. There is also an entire absence of any "scratching" sound which has heretofore obtained in every form and make of sound recording and reproducing machine. I do not consider Mr. Edison entitled to as much credit for the final perfection of the phonograph as for his battery evolution, because everyone concedes he knows more about phonographs than any living man, and it is but natural that he should, when free to work on it, clean up this situation also.

When the average person receives an assortment of suit or dress goods from the tailor or department store, the usual procedure is to detach the card designating the quality of the goods, price, etc. As a result, when desiring to order, it is impossible to combine the card and sample as when received.

This is just about a parallel with the performance of the ordinary man, after he has purchased a storage battery. He puts it out of commission first, and reads printed directions after. Because of this, Mr. Edison had, as his ideal, the production of a battery that can be short-circuited, charged backwards, over-charged, discharged to zero and left standing indefinitely, without injury. A battery that would be light, durable, and stand up under violent concussion and vibration. *He achieved it.*

It is not my mission to feature Mr. Edison. He does not need it. Furthermore, it is distasteful to him. But I thought a little explanation would give you a clearer insight into the character of this weekly letter. It is not a formal advertisement in the real sense of the word, because it is a letter addressed to the *READERS* of the *Manufacturers Record* to familiarize you with the EDISON BATTERY in detail—with its theory, construction and many applications. Furthermore, I am an engineer, and not a compiler of stereotyped advertising forms. I know Mr. Edison intimately. Am thoroughly familiar with his battery. You are interested in learning of both, or you would not be reading this letter. So I am going to try to tell you the story as I would want to be told, if unfamiliar with the subject.

Respectfully,

MILLER REESE HUTCHISON,

Chief Engineer to Mr. Edison.

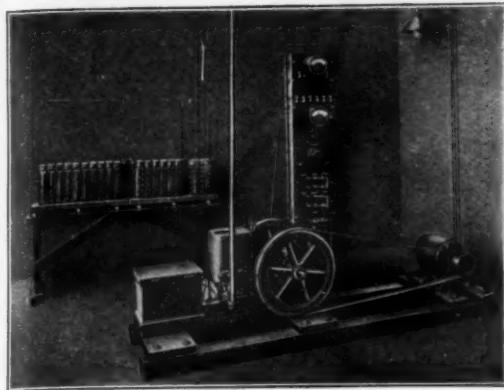
(To be continued next week.)

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151 Lakeside Avenue,

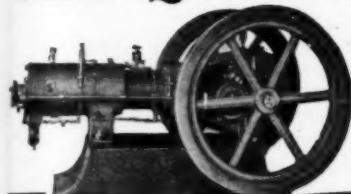
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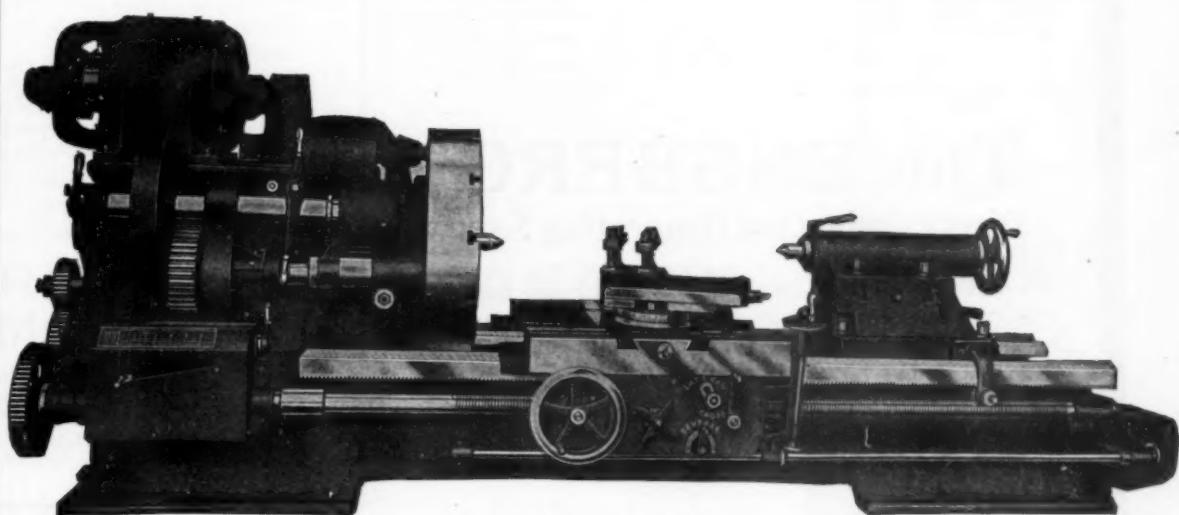
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"I Doubled Production with Motors On My Lathes"

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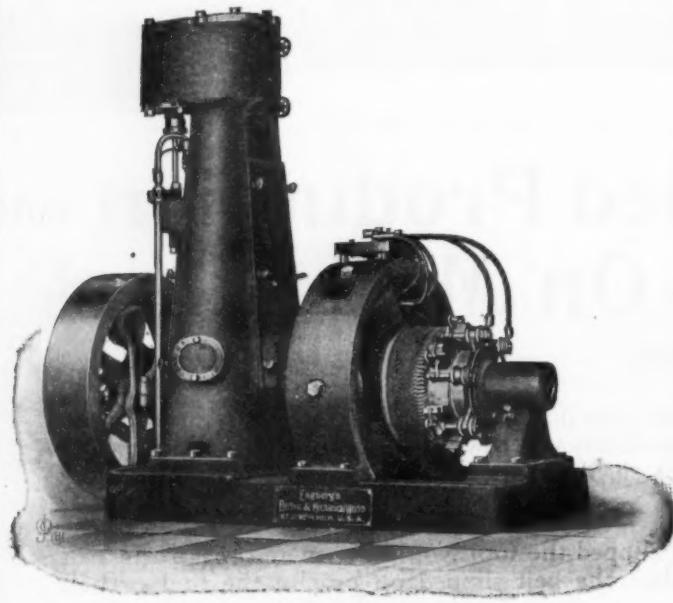
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Are especially adapted for small isolated plants, they are very economical, simple in construction, reliable, and the perfect lubricating system makes them self-contained, as they require but very little attention.



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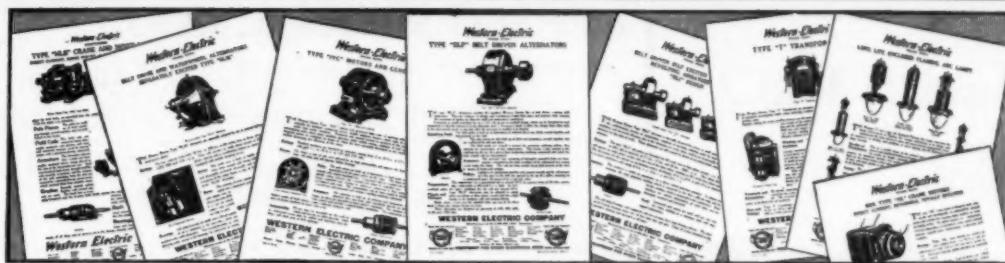
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Coupled Type.....	114
Engine Type.....	143
Gas Engine Driven.....	135

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—Form D (45 to 250 K. W.).....	122
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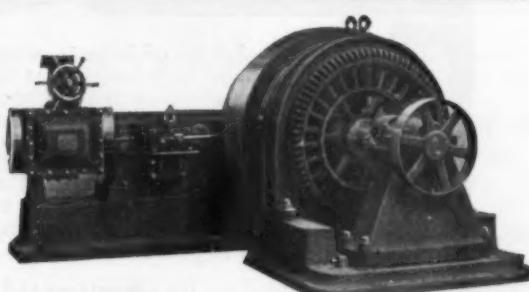


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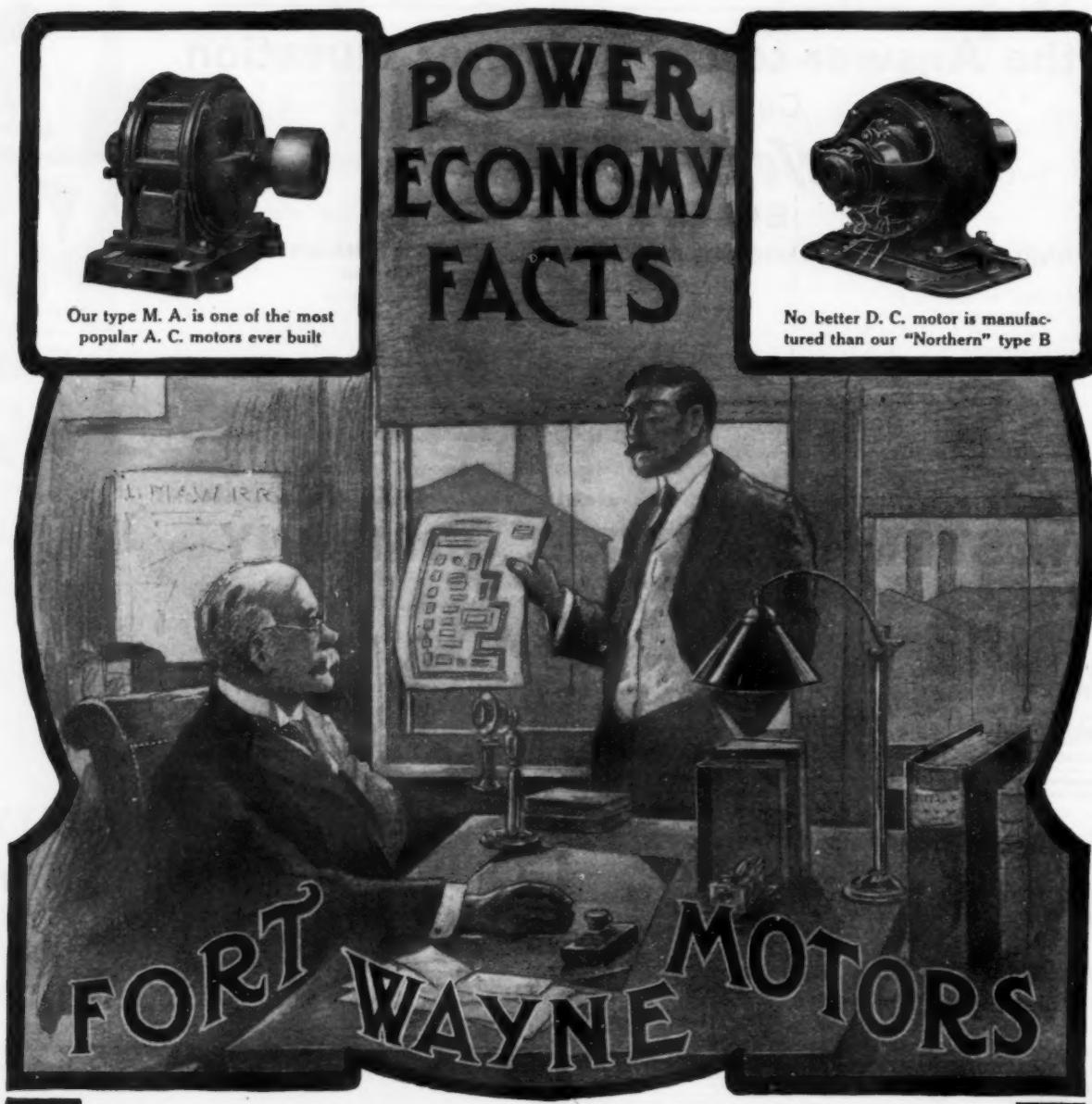
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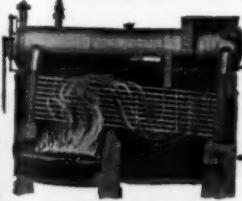
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Embodying to the highest degree Fuel Economy, Easy Steaming Qualities, Safety, Low Cost of Maintenance and Large Overload Capacity.

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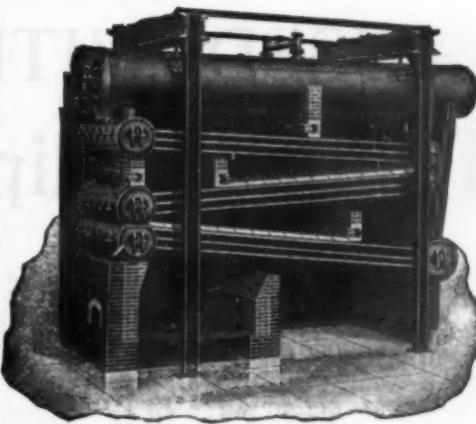
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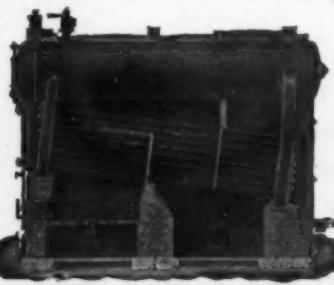
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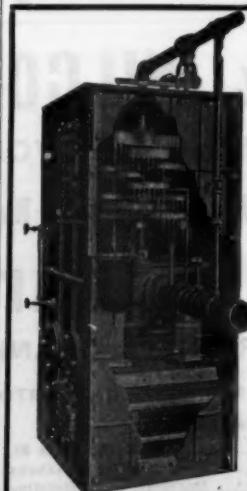
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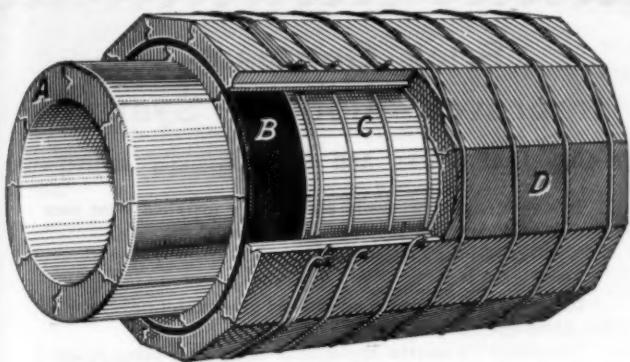
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The simplest and most economical Feed Water Heater.

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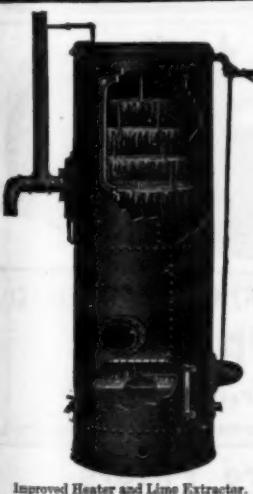
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Not affected by wet and dry conditions common to steampipe trenches. Will not rot. Lasts twice as long as Pine Casing. Absolutely water and steam tight. Each shell is wound with heavy galvanized wire. Coated all over with the best known preservative—Hydrolene B.

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1/8 inch scale in Boilers requires 15% more fuel.
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We also manufacture a complete line of
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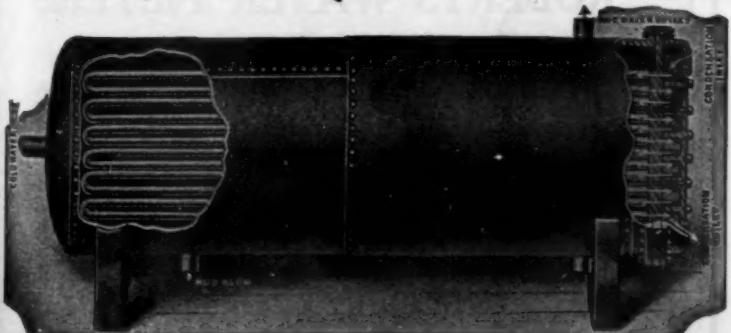
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Is guaranteed to deliver the water to the boiler at boiling temperature (210 to 212 degree). It will also extract the oil from the exhaust, so that the steam after passing through the heater may be used for other heating purposes and the condensed water returned to the boiler without any additional elimination.

Give the Otis a trial, and if you don't find it satisfactory we will pay the freight and carriage both ways.

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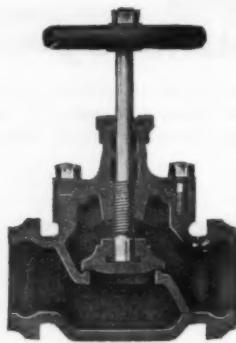


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Valves
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Largest Ice Machine Manufacturers in the World.

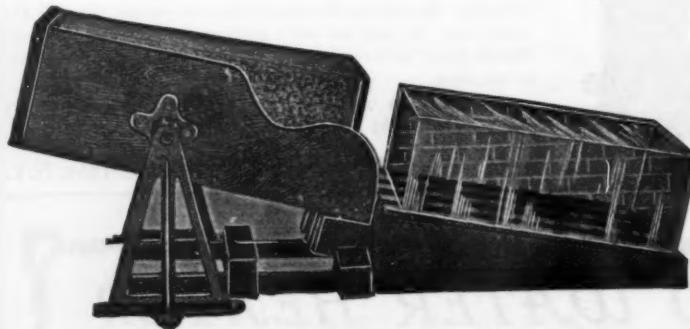
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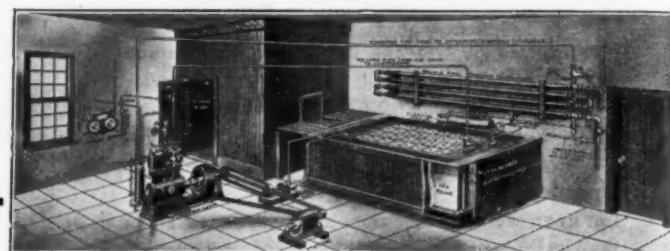
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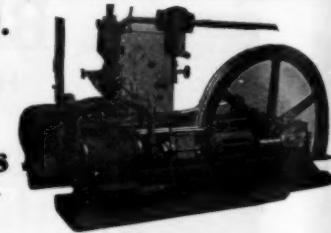
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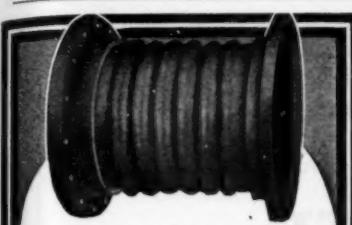
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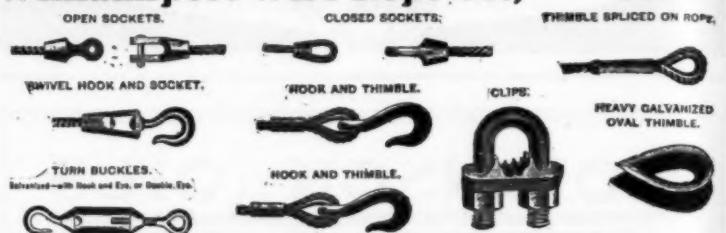
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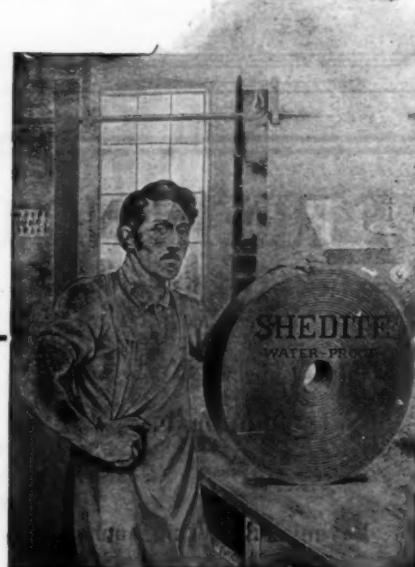
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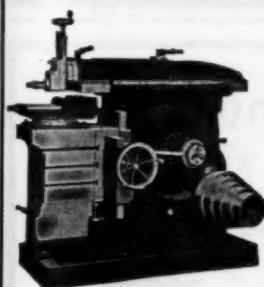
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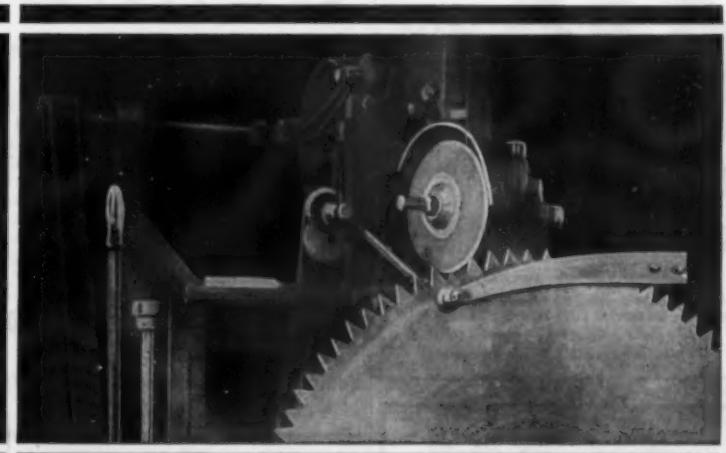
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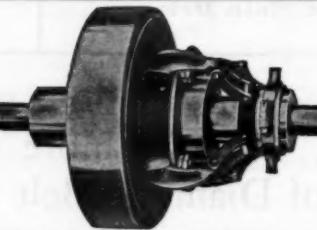


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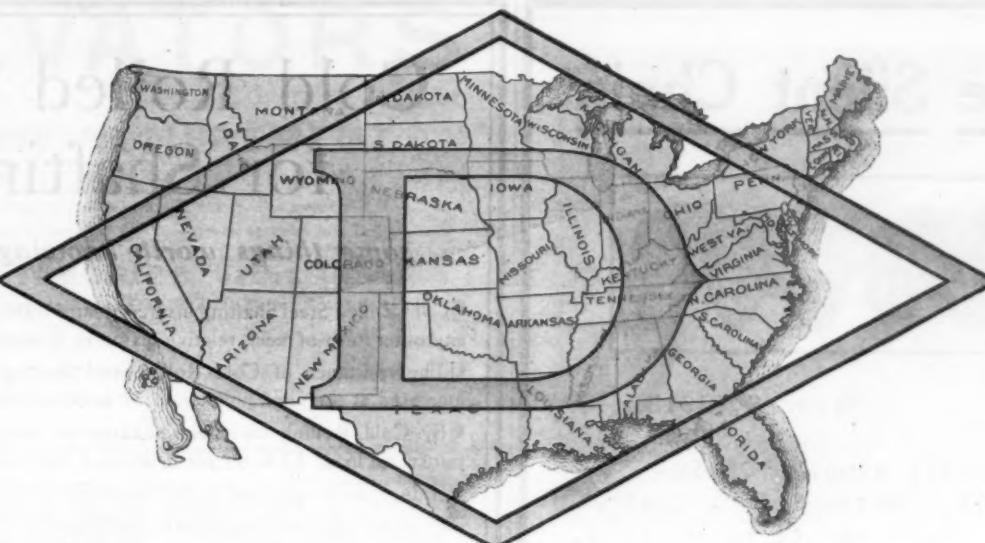
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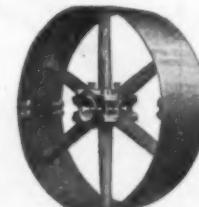
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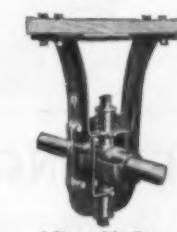
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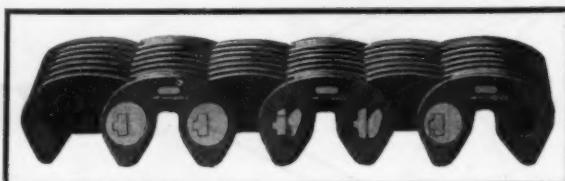
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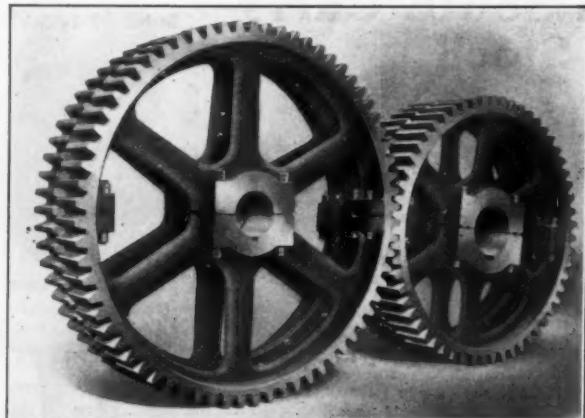
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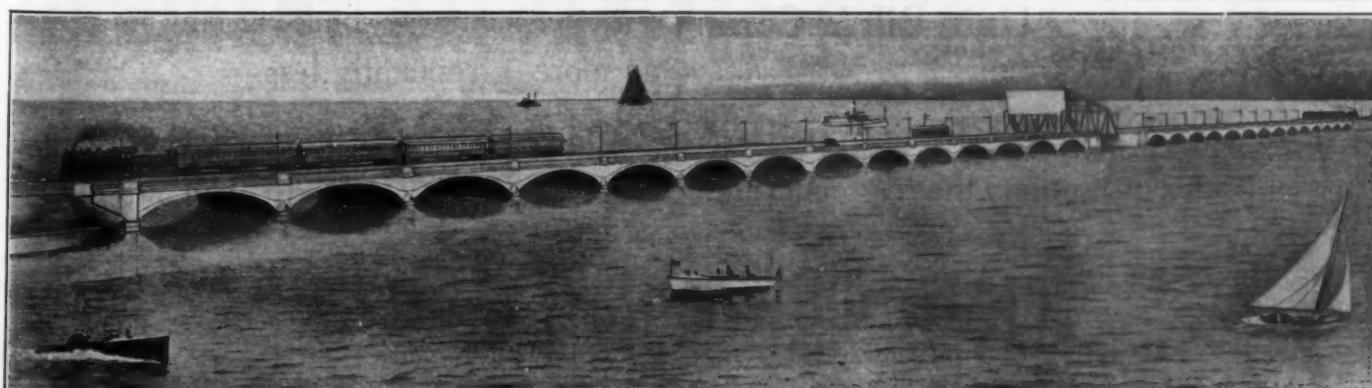
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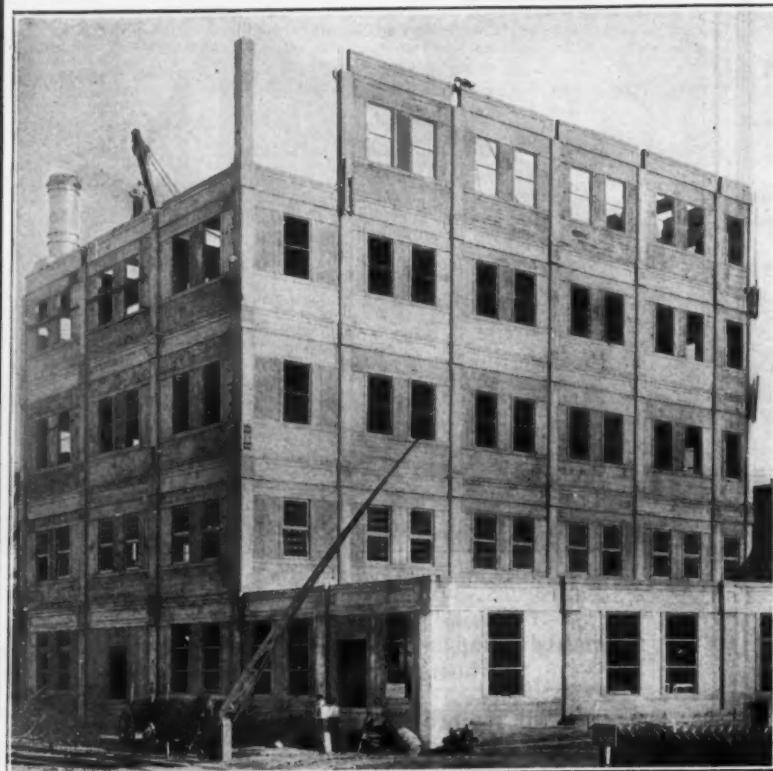
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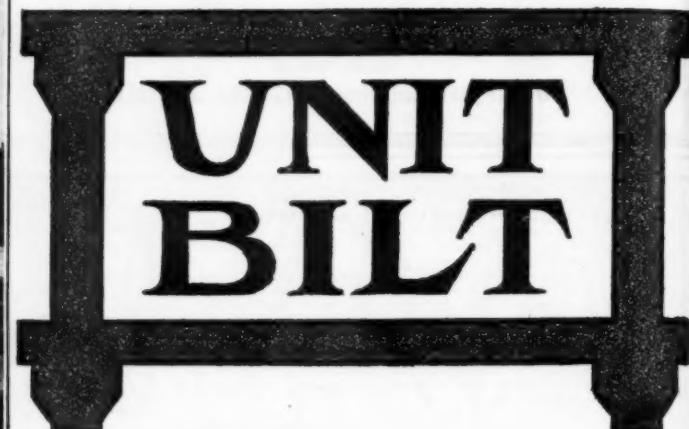
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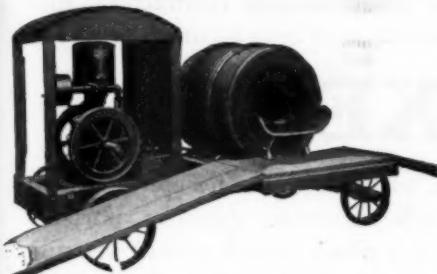
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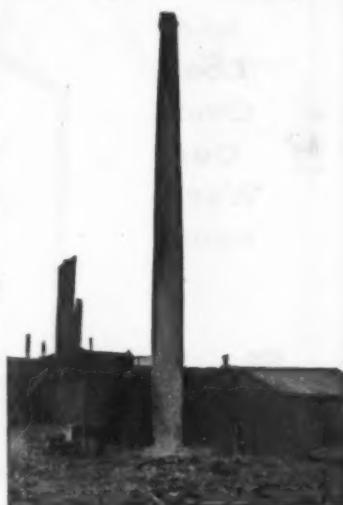
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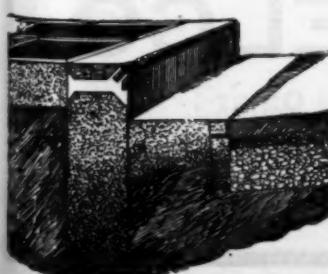
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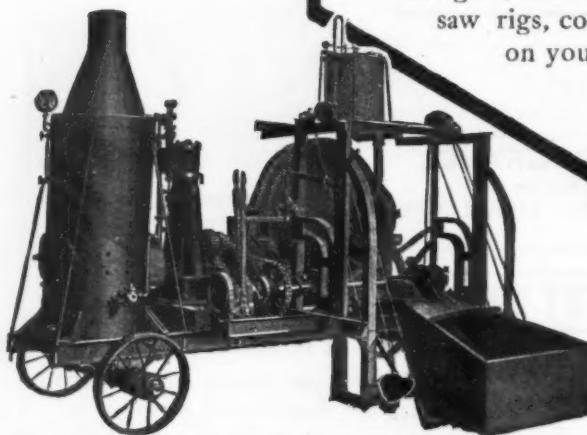
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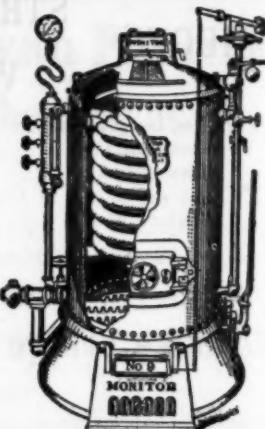
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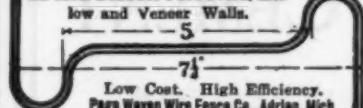
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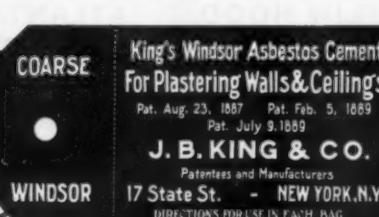
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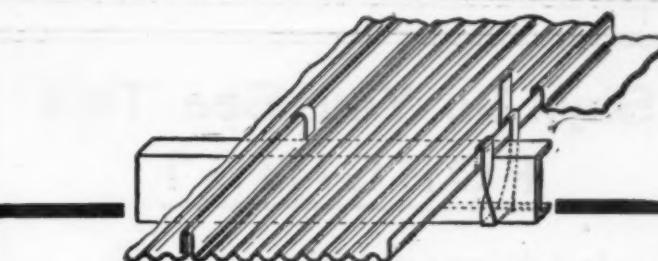
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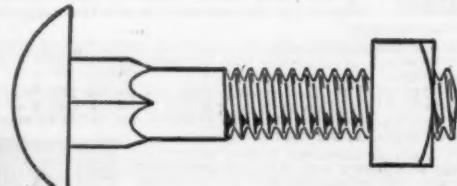
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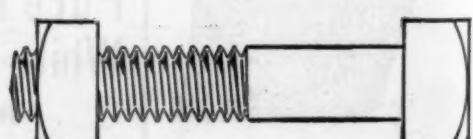
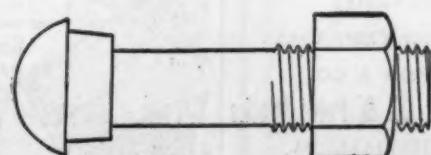
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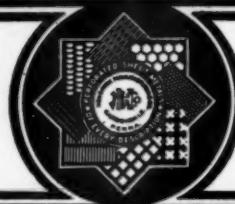
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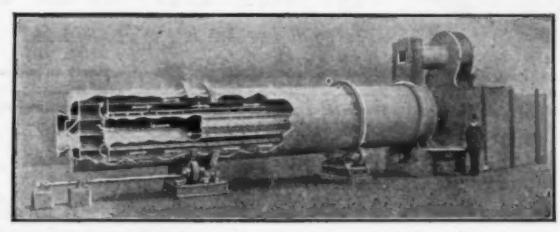
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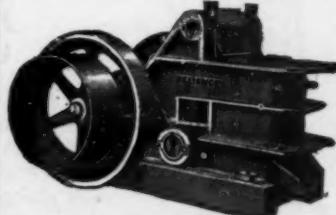
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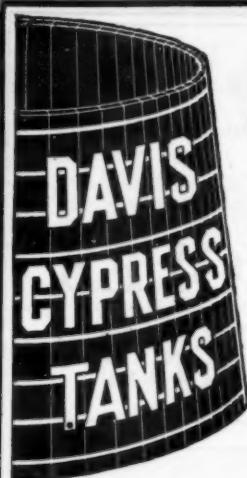
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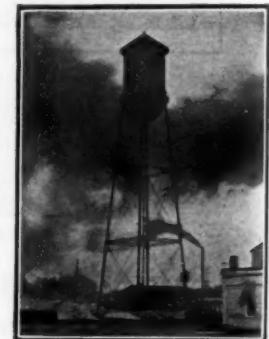
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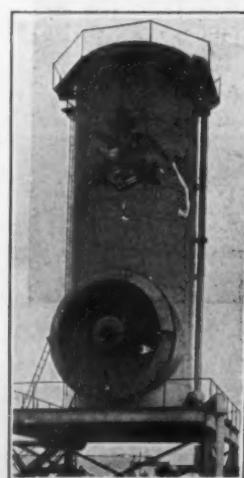
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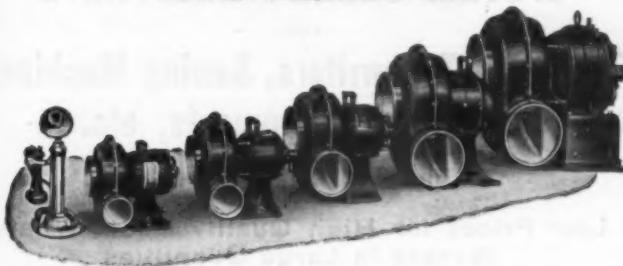
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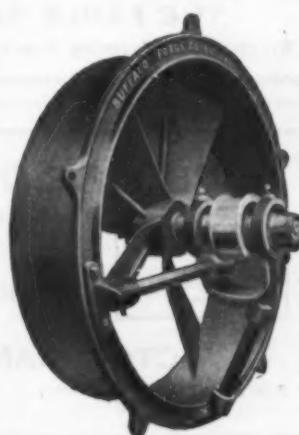
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WEEKLY. }

BALTIMORE, MARCH 14, 1912

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Manufacturers Record.

PUBLISHED EVERY THURSDAY BY THE
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BALTIMORE.

RICHARD H. EDMONDS, President.
FRANK GOULD, Vice-President.
VICTOR H. POWER, Treasurer.
I. S. FIELD, Secretary.

RICHARD H. EDMONDS,
Editor and General Manager.

EDWARD INGLE, Managing Editor.

ALBERT PHENIS,
General Staff Correspondent.

Branch Offices:
New York—52 Broadway.
Boston—643 Old South Building.
Chicago—1116 Fisher Building.
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Subscription, \$1 a year
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Mexico, Cuba, Porto Rico, Hawaii and
the Philippines.
To Foreign Countries (including Canada) in
the Postal Union, \$6.50 a year.

[Entered at the Baltimore Postoffice as second-class matter.]

BALTIMORE, MARCH 14, 1912.

INCREASING THE USE OF SOUTHERN IRON ORES.

With every comparatively new country rich in resources, especially minerals, the present condition of its industries represents the solution of an equation of many members. Many of these are apparently fixed quantities, such as the richness of the ores and the character of the contained impurities. Distance from markets and from fuel supplies really changes their relationship to the result of the equation with every change in such variables as market price and trade demand. The new country continues in the "new" class so long as there remain many deposits of ores or fuel barred from use by the conditions of the times.

Among the factors in the eventual utilization of these deposits, and which offers most surprises in the course of progress, is technologic development—the invention of new processes or even devices by which the industrially maimed deposit becomes adaptable to the industry.

Naturally, these technologic surprises affect most seriously the humbler mineral supplies, and we see the greatest technical progress in the utilization of lower and lower grade clays, stone, cement rocks, etc.

Now, in Southern States, standing somewhere about halfway between the precious minerals, like gold and copper, and clays at the lower end of the lists, are, in addition to the vast resources of iron ores available for the iron and steel industry, innumerable

deposits stranded from the hope of such utility by some defect, such as excessive phosphorus or sulphur, too much silica, or simply too low a grade as to iron contents, temporarily barring them from consideration. Could all low-grade ores be utilized in the United States, Hayes says our iron resources would be increased fifteen-fold.

One class of iron ores is usually debarred because of being in the form of sand, or not sufficiently lumpy to work well in the modern furnace. Now to these has come in the last few months a series of aids classed generally as "sintering" processes, and several of which were studied with much benefit at the recent meeting of the American Institute of Mining Engineers in New York.

The large amount of soft or granular ores now in use, and the really considerable quantity of flue dust which they yield from furnaces of high pressure blasts, have called general attention to the subject, and the general consideration of the subject will bring sintering processes into general use, at least to such an extent as they are entitled to.

They may be considered in three classes. First the oldest type—those in which the iron ore was heated to such a temperature as to bring about considerable chemical changes, in the course of which the particles become more or less fused together. This high temperature affected in one process in an oxidizing atmosphere also eliminated the sulphur to a considerable extent.

In the second type of processes the ore in very thin layers is heated with some form of carbon just sufficiently to partly reduce the iron ore and also stick the particles together. The third process involves the addition of a binder in slight amount and the briquetting of the material in a special form of briquetting press. Samples of the products of all the processes were shown, sufficient to make it evident that all are plentifully efficient in effecting "sintering" or "agglomeration" or briquetting—the real question is simply that of cost. Concerning that it may be said that probably all are low enough in cost to be valuable, and it is really a matter as to which shall be selected among several, all of which are good. Hayes estimates that there are at least two billion tons of iron ore in the South that is not available now for use for one reason or another. For the portion that is objectionably fine-grained, and for the low-grade ores which can be enriched by grinding and washing, the sintering processes will be a valuable aid.

AN INVENTORY FOR PROGRESS.

Rather an interesting departure in the conduct of business organizations has been made by the Commercial Association of Pensacola, Fla., in securing the services of a chemical engineer for an exhaustive study of the manufac-

turing and agricultural resources of the community. Secretary Leland J. Henderson of the Association writes that the Association has also a field agricultural agent whose business it is to organize vegetable and farm products contests and packing-houses and to demonstrate improved methods of farming, and that the investigations are being conducted with a view to developing the resources of Pensacola and the territory adjacent in Southwestern Georgia, Southeastern Alabama and Western Florida. Results of the investigation are already being announced. Pensacola has thirty proprietors of industrial plants employing more than 1400 persons in many lines, and the report of the chemical engineer states that the monthly waste of materials in the city includes 650 tons of garbage, 42 tons of fish scraps, 250 tons of hematite, 5 tons of flint and 50 tons of oyster shells, and, within a radius of 50 miles of the city, 129,767 tons of wood valued at nearly \$63,000. The report does not stop at noting these wastes, but suggests the advantages in using them as materials in industry. It is shown that the wood wastes, for instance, may be used in the manufacture of turpentine and rosin and of pulp for paper, together with other products.

This policy of the Commercial Association is a very practical one, and if due publicity be given to the results of the investigations by the chemical engineer, it should bring about a marked increase in the industrial development of the city.

THE SOUTH AND THE APPLIED CHEMISTRY CONGRESS.

Typical of the appreciation of American communities and industries of the utilitarian opportunities offered in the meeting in this country in September of the Eighth International Congress of Applied Chemistry is a list of cities to be visited in connection with nine tours which have been tentatively arranged for the delegates to the Congress. This list is published in the latest announcement of plans for the Congress, and the statement is made that many and highly interesting additions to the list will follow in the near future. Three of the tentative tours extend through the South, one taking in St. Louis, Nashville, Chattanooga, Atlanta and Ducktown; one St. Louis, Shreveport, Alexandria, Atlanta and Washington, and one St. Louis, Shreveport, Alexandria, New Orleans and El Paso. It is pointed out that it will, of course, be impossible for the Congress to visit on excursions or set trips all of the 321 different establishments in 144 cities and representing 139 distinct industries or branches thereof on the list, but individual members or small parties of members will be granted permission to visit any of the works on the list under certain conditions defined as follows:

It is understood by all the establishments

on this list or its successors that all members who may ask for permission to visit works, or who may enter any works on this list because of their membership in this Congress, that they will not, under any circumstances, attempt to obtain entrance to the works of a competitor; further, that all works to be visited by members of this Congress shall have advance notice of the names, home addresses and business connections of all intending visitors, and that such works shall have the right to exclude anyone on such list from such visit; members intending to visit works not contained in any excursion list should notify such works in writing and in advance of that intention, and also supply their name, home address and business connections. Failure or omission on the part of a member to disclose himself as a competitor when making any request for permission to visit will be taken as a direct and unequivocal statement that such member is not a competitor, and any works from which such information is withheld has the right to insist on a positive declaration satisfactory to such works to the effect that the applicant is not a competitor, if it so desires.

Some of the works on this list are willing to admit competitors provided that satisfactory written assurance is given that such visiting member will reciprocally permit inspection of his own plant by a representative of the works to be visited. It is, therefore, suggested that members desiring to inspect competing plants should come prepared with written authority from their principals guaranteeing such reciprocal inspection, or to have such details completed in advance in the manner prescribed below, by the principals abroad; such negotiations must not be conducted with the works direct, but by and through Prof. M. C. Whitaker, chairman factory visits committee, Columbia University, New York city, and not otherwise; requests for such reciprocal arrangements not passing through Professor Whitaker's hands will not be honored by any of the works so addressed. This rule will be strictly enforced because of the desire on the part of the officers that works that have expressed their willingness to aid the Congress shall not be burdened with needless detail and correspondence.

Of the 144 places already on the list, 41 are Southern, including Alexandria, La.; Atlanta, Ga.; Auburn, Ala.; Baton Rouge, La.; Bartow, Fla.; Birmingham, Ala.; Caddo, La.; Chattanooga, Tenn.; Columbia, Tenn.; Copperhill, Tenn.; Franklin, La.; Isabella, Tenn.; Little Rock, Ark.; Memphis, Tenn.; McAlester, Okla.; New Orleans, La.; Nashville, Tenn.; St. Louis, Mo.; Shreveport, La.; Sulphur, La., and Weeks Island, La.

Among the mining and manufacturing industries which may be studied at these places are iron, limestone, manganese, fertilizers, acids, coal, sundry chemicals, coke by-products, cotton, cottonseed oil, ice, steel rails, wire and nails, brick, sugar, Portland cement, phosphate rock, salt, sulphur, cotton, bauxite, creosoting and other wood preservation, wood distillation, petroleum, natural gas, lead and zinc, marble, artificial gas, electric generation, glass, and oil and sugar refining.

The list as already arranged reflects a considerable amount of intelligent work on the part of the American committees in charge of the arrangements for the Congress, as well as alertness on the part of the managements of industries and local business organizations, and is a promise of interesting and instructive recreation for visitors

from abroad, who will number probably one thousand. It is to be noted, however, that but four business bodies are represented in the Southern list; that is to say, organizations undertaking to neglect no chance to attract the attention of investors to the advantages of their respective localities. The expected additions to the list may result in a larger showing for the commercial organizations as being immediately interested in plans for making the visit of the chemists pleasurable and profitable. The very tentative character of the excursions as planned may account for some delay on the part of these organizations in getting into line, and, indeed, it will depend upon the information received by June 15 by the transportation committee of the Congress, P. O. Box 1625, Philadelphia, Pa., what cities are to be actually visited. Not before then will the definite routes and itineraries be announced.

From the moment of the announcement of the date of the International Congress of Applied Chemistry the MANUFACTURERS RECORD, acquainted with the character of the men who will come to the Congress from all the civilized countries of the world, and convinced of the importance of these visitors becoming acquainted with the great storehouses for chemical industries in the South, has urged miners and manufacturers of that section and the developers of power of different kinds to beatir themselves in assuring the visitors of a warm welcome in localities that will especially appeal to them. Probably never before has such an opportunity been presented to the South for publicity in quarters where publicity will pay. There is such a vast amount of material in the South still to be utilized in commercial chemistry, and that utilization will involve so much material development for the South that every possible thing should be done to give the members of the Congress full knowledge of them. The South should see to it that before June 15 the transportation committee of the Congress has such definite and elaborate information of the attractions in the South for the chemists that it will be impossible for an itinerary to be arranged that will not offer them the means of obtaining a comprehensive survey of Southern resources, Southern achievement and Southern potentialities.

A GREAT WASTE.

Gradually there is developing a public mind protestant against the emptiness of the convention idea. Says the Gainesville (Fla.) *Sun*:

The multiplicity of conventions of all kinds has become well nigh or quite a burden. If the average man were to attend one-half of these gatherings to which he is invited in the course of a year he would have but little time left for anything else and would be decidedly poorer in purse. In truth, this matter of conventions is overdone. Every society, great or small, must have its convention or several of them in the course of a year. While in many cases such meetings are of value, probably with most of them it means an expenditure of time, money and energy that could be more profitably utilized in other ways for the benefit of the causes in whose interests they are held.

The announcement in the same paper that an influential railway passenger association is in favor of doing away with special rates for delegates to conventions indicates that one phase of the impracticability and non-utility of many a convention is beginning to be realized, probably following observa-

tion of the difference between the preliminary announcements of the thousands of delegates expected and the actually comparative few who are delegates enough to be willing to even pay a reduced railroad fare. Any convention attended by thousands of delegates is, *ipso facto*, depending upon sound to take the place of substance and is of practically no value to the country. Representative results cannot be obtained from a body of thousands of delegates. Local business organizations and municipal and State executives are largely depended upon to appoint delegates to the hundred and more conventions, congresses, parliaments and what-nots that have come to the surface without just provocation in the past few years. It is quite an easy thing, not to say an agreeable thing, for Governors and Mayors to appoint delegates. But the fact is generally forgotten that such appointment is a purely personal act and confers upon the delegate no representative character binding the people of a city or of a State to the conclusions that a convention may reach. It is a somewhat different proposition for the business organizations, in that they may feel obliged to stand by the policy to which their duly accredited delegates may be committed by attendance upon conventions. In that situation there is danger of becoming involved in alliances or entanglements that may prove unwise or harmful for the business organizations. If all such local bodies should keep that thought in mind their work would be less hampered than it is at present and the country as a whole would be benefited.

Business men having a wide range of observation are likely to agree in the conviction that this country is overburdened with organizations of all kinds, and that many of these organizations, usually originating in a convention, have really no reason for their existence save the opportunity they give for drawing salaries in return for no material services to men who usually are the actual organizers of them, although they do not appear at first hand in the preliminaries. There are, of course, many organizations, such as those of the National bankers, the lumbermen, cotton mill men, cottonseed-oil crushers and the representatives of other lines of industry and endeavor that serve a good purpose because they have a special business at hand and are organized to advance it. Again, it is quite advantageous for men of different interests to get together now and then simply for the purpose of rubbing up against one another. But, as a general thing, any proposition looking to a permanent organization on sectional lines or on National lines, with nothing but an indefinite program, may be sized up as the plan of some individual to make an easy job for himself and his cronies. Such organizations may not necessarily be actually harmful, beyond the waste of money upon the salaries or upon the expenses of publicity which frequently is publicity designed to preserve the salary for the promoter. There are instances in which they have been harmful, in that the salaried officials, left practically to their own devices by the supporters of the organization, have used the prominence given themselves to further schemes entirely distinct from the acknowledged purposes of the organization. Support of these fleeting organizations by such bodies as chambers of commerce and

boards of trade that have a peculiar province and a proper task not only is employed to give a standing to the adventurous organizations, but tends to divert time, money and energy from the real work of the local bodies. The suggestions of the Gainesville *Sun* are eminently sound. This is an age in which the brightest minds of the world are intent upon the conservation of energy of every kind and the economic utilization of what has long passed for waste. Greater than the waste of money, greater than the waste of energy is the waste of time. The supply of that for every man is strictly limited. He is bound to make the best use of the time at his disposal. He is wasting time in attendance upon conventions of indefinite intent. That is why few business men attend conventions of vague purpose and omnium gatherum intent.

DRAINAGE OF WET LANDS.

In a letter to Mayor Behrman of New Orleans expressing regret at it being impossible for him to be at the drainage congress at New Orleans next month, President Taft seemed to indicate the limitations of the Federal Government in drainage projects in the following words:

The subject-matter of the convention is one in which I have a deep interest. I am very anxious that the improvement in navigation and drainage should proceed *par posu*, the one at the expense of the United States and the other at the expense of the State, so arranged as to secure the most effective co-operation of the central and the State governments, and you can count on my very warm support of any measure which carries out this purpose.

Some of the enthusiasts for comprehensive drainage undertakings like Vice-President Park of the Illinois Central Railroad, who is quoted elsewhere in this issue of the MANUFACTURERS RECORD—and the subject is one that appeals to the imagination of broad-minded men—are inclined to the belief that the undertaking is one in which the Government should have a large part. There is no doubt that complete reclamation of all of the 75,000,000 acres of such wet lands in the United States as may become highly profitable in agriculture must involve some participation on the part of the Federal Government. But that fact should not, in justice to the owners of the greater part of such wet lands and in justice to landowners generally, be permitted to have influence in countenancing participation by the Government in drainage operations that lie distinctly within the province of separate States or individuals.

Some individual operations, perhaps the larger number of them, cannot be carried through properly and successfully without the supervision, at least, of the State, so that the rights of all citizens may be conserved. Some State operations, but they comparatively few in number, may not be accomplished right without the participation in more or less degree of the Federal Government, so that the equities as between States may not be infringed. The State cannot permit one man to drain his land if thereby the land of others is to be submerged; its duty in the premises is to offer the means for a co-operation of all landowners likely to be affected by the improvement. So, too, no single State can be allowed to further a general plan of drainage if it shall result in injury to lands in an adjoining State. Moreover, there are great areas

of wet lands in several instances in unbroken stretches extending from one State into another and directly related to the improvement of navigable waterways, which is distinctly a task for the Federal Government. In both cases, either as performing necessary work that the States cannot do of their own initiative because of conflicting interests, or as making the most of navigable waterways, the drainage of wet lands consequent upon the activities of the Federal Government would mean a contribution to the public welfare with injustice to no State or to no person. But it would be going beyond the danger line for the duty of the Government as to waterways to be stretched into constructing, for example, within the States navigable canals *de novo* as a part of the system for the reclamation of wet lands owned either by the State or by individual citizens. The Government would have no more right to do that than to use the proceeds of general taxation in the payment of which all farmers share in supplying fertilizers to farmers in some section where land was otherwise unproductive, or in furnishing farming implements and machinery to would-be agriculturists who could not afford to buy them.

To be sure, the Government may have already gone beyond its province in some particulars in connection with other agricultural projects, and, indeed, there has been criticism of its policy as to irrigation of arid lands. But no mistake was ever rectified by repeating it or expanding it, and because there may have been errors in the activity of the Government in reclaiming land by putting water on it is no reason why another mistake should be made by errors in Governmental activities in reclaiming land by taking the water from it. The vast body of arable lands in this country are neither arid nor wet. The labor of individuals have made them what they are, where they are now improved, and the labor of individuals will bring the remainder of them under cultivation. Such individual energy and enterprise are handicapped as soon as the Federal Government undertakes to improve other kinds of lands owned by individuals.

The time is not many centuries removed when the population of the United States will be so great that the most efficient handling of the whole body of arable land, that now under cultivation or to be brought under cultivation in the usual way as well as that to be redeemed from too little water on the one hand and too much water on the other, will be demanded to meet the food requirements of the country. It is the part of wisdom for individual or corporate owners of wet lands to bend every energy of theirs to making their possessions marketable, for the reward of their efforts is bound to be great, and private capital invested in reclamation projects where the reclaimed land will be tillable will have increasingly profitable returns. But the greatest ultimate good for all, for individual owners, for investors and for the whole population looking to the lands of the country as the source of their food supplies, will be assured if the activities of the Government in primary or more comprehensive agricultural operations be confined to limits in which individual initiative will not be crippled or paralyzed entirely, and individual enterprise and energy will not be put at a disadvantage.

Everglades for Sugar-Cane.

By R. E. ROSE, State Chemist of Florida.

In reference to an article from myself as to the advantages of the Everglades section for sugar culture and manufacture, I have so continuously advocated the "drainage of the Everglades," on account of their being particularly adapted to sugar culture, that it appears rather superfluous to again impose my views on the public.

That the Everglades will be largely devoted to sugar and rice production when fitted for culture by a system of perfect drainage—which is now being made possible by the State cutting canals of sufficient size and number to afford the landowner an opportunity to properly drain his fields—is but a question of a few years.

In spite of "free sugar from Hawaii and Porto Rico"—"20 percent. duty off on sugar from Cuba"—the "sale of the Friar lands in the Philippines," with free sugar therefrom, and all the other obstructions possible by the "Sugar Trust" to American-grown sugar, beet or cane, the cane belt of the South will yet produce the sugar of America, and by far the largest portion will be produced in the Everglades, a region very similar to Southwest Louisiana, where vast areas of practically identical soil are now drained and devoted to the culture of sugar and rice. The Everglades can be and are being drained by gravity, having 21 feet fall from their apex to tidewater, while in Louisiana, as in Holland, the drainage is largely by pumps, particularly during high water on the Mississippi.

Again, the Glades are practically immune from frost. Frost to injure cane has never been known south of Lake Okeechobee.

On similar lands reclaimed, saw-grass marshes, cypress swamps, etc., in Florida (and in Louisiana), maximum crops of sugar-cane have been and are now being grown.

There are vast areas of muck land (low hummocks, river bottoms, saw-grass ponds) exactly similar to the "Glades," both chemically and physically, not only in Florida, but in many other localities, only waiting intelligent drainage to become most productive fields.

Unfortunately, "the drainage of the Glades" has for years been a political issue. Hence the question of their reclamation for the development of their agricultural wealth has been made secondary to the political issues involved.

No fairminded man who will visit the Glades, note the effect of the State canals, that are not designed to drain the adjacent fields, but simply to provide an outlet for the necessary lateral and sublateral canals, and field ditches, to be provided by the landowner, will hesitate to testify to the success of the project and the wonderful fertility of the soil. That there will be misrepresentation by speculators, that many will be disappointed in not finding their lands ready for culture immediately, goes without saying.

However, the Everglades are being drained by the State cutting the necessary outlet canals and various landowners the necessary lateral canals and ditches to properly drain their fields.

When a tract of land in the Everglades, large or small, is properly and perfectly drained by the necessary ditches to put the soil in proper physical condition maximum crops of rice, corn and sugar-cane will be produced thereon by intelligent cultivation.

While the Everglades will produce maximum crops of cane when properly drained and cultivated, there are many millions of

acres of excellent cane territory in all the Gulf States, from Montgomery and Macon south to the Gulf. Their development has been retarded largely by the influence of the Sugar Trust, that has at all times opposed the development of American sugar production.

I fully agree with you that truck farm-

ing and fruit growing are but adjuncts to agriculture in any part of the world. When Florida, not only the extreme southern part, but the entire State, returns to legitimate agriculture, sugar, cotton, rice, tobacco, corn, potatoes, sweet and Irish, and particularly stock raising, beef cattle and dairy farms, for which it is particularly adapted, no State in the Union will be more prosperous, as the State is peculiarly adapted to agriculture, stock raising and dairy farming.

Memphis as a Center of Industry and Development.

[Special Correspondence Manufacturers Record.]

Memphis, Tenn., March 8.

In Memphis and its suburbs is a population of about 160,000 people. In population as well as in wealth and commercial and industrial development Memphis is progressing at a rate hardly exceeded by any other Southern city, and there is every indication that Memphis will continue to grow in every way until it becomes one of the really great cities of the upper South and of the country as well.

In addition to the development which is occurring in the Tennessee territory tributary to Memphis, there is at the present a most extensive work being carried on in the way of draining the swamp lands of Arkansas, west of Memphis, across the Mississippi River. The movement in this behalf is really one of the notable developments now under way in the South. Dozens of projects covering areas anywhere from a few thousand to 200,000 acres in each undertaking are either under way or in process of perfection, and from present indications it would appear that every foot of the swamp lands of Arkansas will be made fit for cultivation within the next few years. The attention of Northern and Eastern financiers has been attracted to the desirability of drainage bonds of Arkansas, and no difficulty is now encountered in selling such securities. With this situation it is merely a matter of details as to formulating the plans for the organization of districts, the issuance of bonds and the performance of the drainage work. Largely on account of the drainage and settlement of the lands across the river from Memphis, and also because of the general development throughout this entire territory, plans have been formed for the increase of transportation facilities, which include not only vastly-increased terminals for the railroads already served by present bridges, depots, terminals, etc., but contemplate the expenditure of many millions of dollars for a new bridge and new terminal facilities.

There has recently been constructed a new railroad passenger station which, with land purchased and other expenses, has cost about 3,000,000. This is owned by the Memphis Union Station Co., and will be used by the Louisville & Nashville, Nashville, Chattanooga & St. Louis, Iron Southern, Cotton Belt and St. Louis, Iron Mountain & Southern railroads. It is a very handsome structure of steel, stone and white marble, and has trackage for 16 trains. The Illinois Central Railroad will shortly begin the construction of a new passenger station to take the place of the structure at Main and Calhoun avenues. In addition to the Illinois Central and the Yazoo & Mississippi Valley railroads, the Frisco and the Rock Island railroads will use this station also. It is announced that this building will probably be ready for use early in 1913.

The project for the new bridge across the Mississippi River at Memphis has

been seriously interfered with by the shocking tragedy of last January, resulting in the death of J. T. Harahan, formerly president of the Illinois Central; F. O. Melcher, vice-president of the Rock Island system; E. B. Pearce, general counsel for the Rock Island system, and E. E. Wright, attorney at Memphis for the interests involved. All four of these gentlemen were on the way at the time to keep an appointment with the Mayor of Memphis, at which meeting the matter of the plans for the construction of the bridge and terminals were to be discussed. This deplorable tragedy wiped out every one of the leading spirits in the new enterprise, and it has been necessary for others to take up the work from the very beginning. It is regarded in Memphis as highly probable that the new project will be successfully carried out; however, there are a number of details which have not yet been arranged. Citizens of Arkansas insist that a foot and wagon way be included in the contract for the new bridge. The question as to whether the railroads or property-owners shall pay for approaches is still under consideration. It is the belief of the Memphis people who are interested in the enterprise that sooner or later an agreement may be reached by which the Illinois Central Railroad and other parties at interest will come to an agreement and that the important improvement will be carried out.

Of much interest and importance in connection with the industrial development of Memphis is the fact that the Memphis Warehouse Co., under the new name of the Memphis Terminal Co., will in the near future spend \$500,000 or such a matter in the construction of additional warehouses and compresses. Already this company has facilities for the storage and handling of a greater number of cotton bales than any institution of the kind in the South. The increased capitalization will practically double the facilities.

Of much interest generally, and of much importance locally is the fact that the fire-proof warehouses of this company, and the methods by which they are operated, give its warehouse receipts a financial standing which enables Memphis bankers to easily float the securities in the East at par. This permits the banks of Memphis to provide money for local uses at all seasons of the year, whereas under other circumstances they would be compelled to restrict their accommodations in the season of activity in the cotton business. Plans and details for the proposed enlargement of the plant will occur at an early date. With the increased capacity it will be possible to store 500,000 bales of cotton in these warehouses at one time.

Memphis is essentially the hardwood market of the country. This has resulted in the building of a large woodworking industry, which includes the manufacture of furniture of various lines and a great variety of other woodworking plants. The

recent development in this line is the establishment of the Forest Products Chemical Co., which proposes to manufacture acetate of lime, charcoal, alcohol, wood tar, creosote and pitch. An interesting feature in connection with this establishment is the fact that of the \$100,000 capital which the company will require, a considerable portion is subscribed by people of Memphis. The president is Mr. B. L. Mallory, prominently identified with numerous enterprises in Memphis, and the vice-president and general manager is J. S. Warren, until recently secretary of the Memphis Business Men's Club; the secretary and treasurer is James Lawrence, and the directing engineer is Jas. C. Lawrence. The plant is in course of construction, and it is expected to go into operation about the first of June. Memphis was selected because of its location with respect to raw material, and because of the shipping facilities in every direction, particularly the South. The plant will utilize waste slabs, tops, limbs, etc., from timber and sawmill operations. The products will be marketed at home, and also will be exported through the port of New Orleans. The acetate of lime will go to Europe and Eastern points. The alcohol will be used for denaturing purposes and varnish work. The demand for this is domestic as well as foreign. Charcoal will be utilized for black powder manufacture and in charcoal pig-iron furnace operations. The creosote will be utilized in creosoting establishments for the preservative treatment of timber. The crude tar will be used for road binder and fuel briquettes and the pitch for paving work. The capacity of the plant will be 32 cords of hardwood per day.

Memphis is just beginning to be developed as a rice center. The great growth of the rice-raising industry in Arkansas in recent years has opened the way for the establishment in Memphis of an important rice center. Last year Arkansas raised about 700,000 barrels of rice, and this production will be greatly increased. The Mississippi bottom lands, which are adapted to rice growing, have a present yield of from 5000 to 7000 barrels per year, and it is the expectation that this yield will be considerably increased. Memphis has made a good beginning in the rice business by recently building a mill which began operation October 15, 1911, with a capacity of 1500 barrels every 24 hours. From this beginning it is the expectation that a very marked development of Memphis as a rice center will steadily proceed.

Incidental to the handling of cotton bales, in which Memphis leads every other interior city, here is also the great oil milling center of the United States. The estimated output of the oil mills in Memphis for the past season is about 6,000,000 gallons of oil, 55,000 tons of meal, 45,000 tons of hulls and 20,000 bales of linters at 500 pounds each, which altogether represent a market value of \$3,250,000 at the mills.

Incidental to the cotton industry here, there are plants for the utilization of cotton hulls. The Tennessee Fiber Co. has been in operation for some time, and recently a branch of the American Cotton Hull & Fiber Co. has been established. The latter is financed by English capital, and has branches in various Southern cities. The company owns the patents on devices for separating the lint from the cottonseed, and utilizes various products, as well as the cotton fiber secured thereby.

A feature of the cottonseed oil and hull development in Memphis is the relation these industries bear to the growth of the stock-raising, and, incidentally, packing-house industries. Developments in these

lines are regarded as inevitable. A start has been made in this direction by a local institution, the Southern Packing & Products Co. A plant will be constructed at Horn Lake, Miss., about 14 miles from Memphis on the Illinois Central Railroad. A site of 200 acres is owned by the company. The present capital is \$50,000. It is proposed to buy and slaughter live-stock for packing and rehandling, and for manufacture into all forms known to commerce, and to market surplus ice from the refrigeration department, and also to deal in poultry, eggs, etc. In the beginning there will be a 40,000-ton ice machine, the contract for which has already been let to the Triumph Ice Co. of Cincinnati. It is proposed to furnish ice for the six or eight dairies in the vicinity of the site. Most of the stock of the company has been taken by farmers who will raise stock for the packing-house, and who will be customers for the use of ice. The management intends to begin killing from 20 to 50 animals per day, depending upon the available supply of hogs and cattle. As the supply of stock increases the capacity of the plant can be added to. It is believed that a very notable stimulus to the raising of high-bred hogs and cattle will be furnished by the establishment of this packing-house here, precisely as has been the case at Natchez, where a recently established packing-house has proved a remarkable incentive to the raising of stock, not only in greatly increased numbers, but of a much higher grade than had been heretofore known in that vicinity.

In the location of the headquarters of the American Snuff Co. in Memphis the people here see a recognition of the superior distributing advantages the city possesses, and believe that the same cause will impel the location of other interests in Memphis. The court order requiring the dissolution of the American Tobacco Co. compelled the reorganization of the American Snuff Co., and in carrying out these plans a decision was made to remove the headquarters of the company from New York to Memphis. The company is capitalized at \$15,000,000. It has had two factories at Memphis since 1909, with an annual output of about 10,000,000 pounds of snuff, which is one-third of the total production of the United States.

The Memphis development is a many-sided one, and includes every variety of industry, as well as the beautification of the city by means of boulevards, parks, etc., and co-operation in the construction of good roads throughout the tributary country.

Incidentally Memphis is the headquarters for the largest cotton plantation in the world, the Mississippi Delta Planting Co., which owns some 30,000 acres of land in the Delta south of Memphis. This is purely an agricultural proposition, the company having no land for sale. While the raising of cotton will be the principal aim of the company, it is proposed to diversify the crops, growing corn, oats and other grains, the crops being selected with reference to the soils most suitable for the various kinds of grain. There will be a large experimental tract in the vicinity of Scott, Miss., in charge of Prof. J. W. Fox, for many years a Government agricultural expert, and also a professor at the Agricultural and Mechanical College in Mississippi. On this tract and the smaller experimental stations to be maintained on various subdivisions of the plantation there will be raised not only oats, corn, soja beans, Lespedeza, alfalfa, etc., sufficient to completely meet all of the requirements of the plantation, but covering experimentation in domestic and foreign plants that might be adapted to this climate. It is the purpose of the company

to issue bulletins giving complete information about experiments, for the benefit of all the planters of the State who may care for them. The tract is being developed in the most thorough and up-to-date manner. During the eight months the company has been in possession of the tract an extensive system of drainage has been established, under the charge of a resident engineer, B. J. Young. It is proposed to put into cultivation all of the tillable lands of the entire tract. There has been built on the property an oil mill at an expense of \$50,000; a grist mill is being built to grind the corn raised on the plantation. Everything in the way of up-to-date machinery is being installed, including gasoline plows and a deep-well water system, including a reservoir, has been constructed, and a sewer system established. In the town of Scott nine houses for the various managers have been erected at a cost of \$1500 to \$4000 each, and having all modern improvements. About 100 new houses have been built for tenants, and some 500 other tenant-houses have been repaired and put in fine condition. It is the intention of the company to carry on plans for the development of this tract until it is made the most complete as well as the most extensive plantation to be found anywhere.

ABERT PHENIS.

COTTON-GINNING PROBLEMS.

Call for a Change in Methods of Handling the Crop.

Texas Cotton Growers' Association,

Farmersville, Tex., February 11.

Editor Manufacturers Record:

I have been thinking for some time of writing to your valuable journal in explanation of the conditions of the South and the effect the conditions of the South have on the manufacturing interests of the North and East, and to show them that they had a real interest in the welfare of the South; that they could be of inestimable value to themselves by lending helping hand to the South, and that they could practically double their trade with the South and at the same time make their business a great deal more stable and certain.

I do not consider it a disgrace to be poor, especially if conditions have been such as to warrant it; hence what I shall say must be understood as casting no reflection on the South, for it is the greatest country in the world, including people, climate and soil. Neither do I consider it wrong or unbusinesslike to make a clean statement of facts, as I expect to do in this letter.

I feel that I must first introduce myself to your readers, that they may know that at the least I have had an opportunity of knowing what I am talking about. I was reared on a farm, cotton farm, until I was 20, when I began clerking in a country drug store. In a few years I became a partner in it and continued in the work 20 years. I was considered successful for a country boy. Putting my surplus means in farm lands to raise cotton. I had the management of my father's estate, which was small, but in land which kept me all the time growing cotton. Besides, our business depended upon cotton. When I quit the drug business I became interested in a country bank, 10 years ago. The bank depended upon cotton for its success. So I have had a lifetime with cotton, not only raising it, not only selling goods on the strength of it, but lending money on it. I have been all around it and in it. I think I know something about raising it and what the producer gets out of it, as well as the merchant and bank, and also know what is needed to make cotton ginning an occupation that will give strength

to the business, both home and foreign, that depends upon it, as well as to the producer. I quit the drug business because profits in raising cotton became less and less and business became more and more hazardous. The cause of this I will not take your time to explain in detail. Suffice it to say that there was a time when the land was all good that was in cultivation; the rest gave free range for stock. Now it is all in cultivation, good and bad, and in many cases the good is not as good now as the bad was at one time. Numerous other factors enter into the situation.

The thing that hurt worse was fairly good prices for a year or two and then extremely low prices. With fair prices a few years the producers would begin to feel like buying and straightening up their fences, as it were, and would go in debt for some necessities, and a short year would hit them and a loss had to be cared for. Our system of marketing has been very poor and defective. The crop was consumed in a year, but was gathered and sold in three or four months on a strained forced market that is weighted with more speculation than that of any other crop in the world.

The producer of cotton began at the close of the war not only in debt, but with no home, no house in many cases, no stock, millions of slaves freed and everything in a terrible torn-up condition. Description could not do it justice; this is known all over the country.

The farmers began to look about to see how they were to make bread and meat, and they found advances had to be had, and mortgages on cotton were resorted to. This naturally called for selling cotton as fast as it was gathered. Farmers not being organized and so many not able to stand to an organization, they accepted what was offered, paid debts as far as they could and began preparing to plant again. This process of selling has continued until the present. The results are, more uneducated people than any other section. The boys that have been reared on the farm who received a fair education have been called to fill places in the commercial world. True, the South has made rapid gains, but it has been largely by the increase in values of land and at the expense of an education to her children, and not out of the price of cotton or profit thereof.

I have been connected with and at the head of the Texas Cotton Growers' Association for about 10 years, and am prepared to say that there must be a change in methods of marketing, and that the farmers of the South cannot make it alone, and further, that the business interests, who receive their support from the cotton, should not sit idly by and expect the farmer to do so, or even permit him to undergo the strain or hardships to make the change if it were possible for him to do it. The business people in the North and East, as well as those in the South, should see to it that something is done, and done for the present (1912) crop.

It is useless to say that an intelligent people who raise a crop they have a monopoly of, together with the ones who depend upon it for their existence and trade, cannot sell it for enough to decently support the toiling masses who raise it and give stability to the business that depends upon it. It only requires getting together, and I think you are the middle man in the project; you are the logical head to start the ball to rolling. The manufacturing and business men of the country must do the work; it can be done and should be done.

Please publish, and let the echo start from those interested.

W. B. YEARY, President.

WET LAND DRAINAGE.

Views of Vice-President Park of the Illinois Central Railroad.

[Special Cor. Manufacturers Record.]
Chicago, Ill., March 11.

"No public undertaking in the United States today can be more important to a greater number of people than the drainage of the wet lands of the Mississippi Valley."

This epitomizes the opinions expressed to me in a talk I have had with Mr. W. L. Park, vice-president of the Illinois Central Railroad. By word and pen, in public addresses and through articles in the newspapers and magazines of the whole country Mr. Park has been consistently and insistently proclaiming the great advantages the entire country will gain from the reclamation and cultivation of the millions of swamp and overflowed lands the South contains. He energetically championed the national irrigation work undertaken on the arid lands of the West, and now no less exerts his influence in behalf of the subjugation of the 75,000,000 acres of overflowed and wet lands wherever located within the 48 States of the Union.

"There are problems in connection with the drainage of the overflowed lands of the Mississippi Valley which it seems to me the Government alone can properly and expeditiously solve," said Mr. Park. "The task is so stupendous that a perpetual and powerful agency is required to successfully carry it out. The history of the Panama Canal construction—expeditious, economical and efficient to a degree—demonstrates the advantage of having the Government undertake such a great work. The whole project of the drainage of the wet lands of the Mississippi Valley should be carried out on a harmonious plan, such as cannot be provided or put into effect by States or individuals alone. Done piecemeal, there will be inevitable waste and lost motion. With national supervision, there will be secured the most intelligent, comprehensive and coherent plant it is possible to put into effect."

"Moreover, the Government will be in position to furnish the machinery and equipment for this work, such as could be provided in no other way. With the completion of the Panama Canal all the equipment in use there today would be available for work elsewhere, and the entire Mississippi Valley could be drained in a fraction of the time it would take by the employment of any other means."

"However, I am for drainage, whatever means may be employed. There will be need for every acre of drained lands to supply the rapidly-increasing demands for food, and the unsurpassed fertility of these overflowed lands, when drained, will make their subjugation certain within a very short time."

"I look for great results from the meeting of the National Drainage Congress, to be held at New Orleans April 10-13. I gave all possible assistance to the organization of this congress last December, and I believe the meeting at New Orleans will be epoch-making, and that some definite, far-reaching plan will be evolved for carrying out this great work. Men of national reputation and experience in irrigation work are in charge of the congress, and plans are being energetically pushed to secure a large and representative attendance, and the attention of the whole United States will be attracted to the possibilities of land drainage in a way that could not otherwise be obtained. I look for practical results to follow this meeting, and believe the project of draining the overflowed lands of Louisiana and the country generally will be given an impetus that will greatly hasten the day of their complete reclamation." ALBERT PHENIS.

Scientific Management in a Manufacturing Plant.

By EDMUND C. MAYO, M.E., Vice-President and General Manager of the Baltimore Machine Products Co., Relay, Md.

Widespread publicity has been given the subject of scientific management during the past 12 months by the industrial, engineering and daily press. The interest manifested by manufacturers in general brought into the field a wide range of literature and so-called "efficiency engineers" sprang up like mushrooms. A review of the general result shows that a state of skepticism exists at the present time as to the true merits of the system. Close analysis in the majority of cases of failure brings out clearly that the method of introduction has been at fault rather than any fallacy in the doctrine itself.

No cut-and-dried system will apply to all manufacturing plants. A system which will move with clock-like precision in one may bring about chaos in another, and further, because of the prominent part played by the human equation, there must be a high degree of elasticity, or, in terms of engineering, a higher factor of safety than is usually employed under normal conditions.

If a widespread movement of efficiency is to take place in this country the man in authority in every plant will eventually become his own efficiency engineer. Works by such authorities as Taylor, Emerson, Gantt and Going give the fundamental principles involved in the doctrine and tend to stimulate a desire on the part of the management to achieve greater results, but the peculiar conditions surrounding the organization as well as the products of various plants, are best known to the man at the helm, and he is, therefore, best fitted to choose and apply the necessary functions in order to increase his plant efficiency.

A recent Government investigation as to the failure of the system to prove satisfactory in one of its arsenals clearly demonstrates that the workmen must be in sympathy with the movement, or not only will the system fail, but any esprit de corps that may have existed prior to the attempted installation will be destroyed.

The introduction of the system in one of the largest locomotive works in this country was frustrated, owing to the lack of tact on the part of those charged with its introduction. They failed to take into account the fact that human beings were being dealt with, and not theoretical men, as shown on their elaborately-planned charts; and this same story would doubtless be repeated ad infinitum could those who have tried and failed voice their reasons.

To those who know the American mechanic it is an absurd proposition to assume that you can place a stranger in your shop, clothe him with authority and expect him to immediately command the good-will and confidence of your men. The average workingman's ideas of increased production and increased physical exertion are synonymous, and it requires the persuasion of one who is his friend to convince him to the contrary. Tact, common sense, honesty and warm-heartedness are the essential qualities necessary to increase the efficiency of your workmen.

It is not within the scope of this article to set forth the principles of scientific management, as they are amply and ably expounded in his work on the subject by Mr. F. W. Taylor, but it is my purpose to give any aid possible to the advance-

ment of the cause by showing how the system was introduced into our plant without appreciable friction. After carefully looking through our shops it was decided that a time study or "speed boss" must be gotten from the outside, as the timber for such a man could not be found in our organization. Thirty applicants placed their records before us, and after careful investigation a first-class "all-around" machinist with more than usual theoretical knowledge was engaged for the position.

This man was placed in the shop as a workman, beginning in the automatic gear-cutting department and quickly demonstrating to his fellow-workmen that he could set the machines and cut gears in less time than they had ever dreamed of. He was transferred to another department in a few weeks, and so on until he had performed every operation in our plant. Being a good mixer, he quickly became a favorite around the stove during lunch hour. His ability was soon recognized by every workman in the shop.

In introducing this man I did not confide in my foremen for what purpose he was employed, and after a few months he was recommended for the position of shop inspector. This gave him an opportunity to visit all parts of the plant, study the characteristics of the different workmen and also the methods in vogue for doing the work, including time required to set up the machines, speeds, feeds and so forth. The data thus obtained was carefully set down in a note book carried for the purpose, and after shop hours the results of the day were discussed in my office.

Forming a general shop committee, composed of the foremen of the different departments, as well as the storekeeper and purchasing agent, was the next step. The members of this committee were given note books with instructions to make memoranda of the difficulties which they daily encountered in regard to the machining and assembling of our products in their respective departments. After carefully compiling this data the same committee was prepared to take up the subject of redesigning and standardizing our products with reference to the most economical method of production.

In our shop it was feasible to place the completed products on a table in the committee-room, and as each part was removed the best methods of machining and assembling were carefully discussed. It was most pleasing and inspiring to see the manner in which these men matched wits as to the merits of the numerous methods suggested.

This same committee, meeting every afternoon at 4:45, is a valuable asset in the routing and scheduling of work. The storekeeper notifies us of any unexpected delay in the arrival of material; the machine shop foreman of any inability to deliver finished parts to the assembling department as scheduled, and the assembling foreman of inability to delivery to the shipping-room as promised. This gives an opportunity to "shift the shop" to meet these unforeseen conditions. The absence of elasticity at this particular point will create an embarrassing condition, and has been a weak spot in scheduling systems.

If a serious wreck occurs on a railroad, the dispatchers must immediately rearrange their schedules to meet conditions. Just so our foremen agree as to the best

method to overcome the difficulty, and written instructions as to the schedule agreed upon are given out at once.

After setting the time for the different operations, and the same being passed upon as fair by the committee, a further committee was formed, composed of the general foreman, time study man and the general manager. As the "speeding up" began the workmen were brought individually before this last-named committee and shown what tools, speeds and feeds were to be used, what production was expected and their opinion asked. This compliment stimulated the men in a great many instances to state that they could do better than we figured, and they were willing to be shown any method that would enable them to live up to their promise.

The result of the introduction of the system into our plant has been increased wages to every man, boy and girl in our employ and the earning of dividends on a class of work that was formerly done at a loss.

The doctrine of scientific management has reached that stage where it is in the balance of industrial opinion. If it is to stay, it must be shorn of a great many impractical features now attached to it, and furthermore, it must be taken out of the hands of theoretical professionals and be applied by those who have a thorough knowledge of the economic and industrial conditions surrounding a particular plant.

HOUSTON'S TAX SYSTEM.

Advantages According to Citizens Under the New Assessment.

Chamber of Commerce,
[Special Cor. Manufacturers Record.]

Houston, Tex., March 5.

Appraisement of every piece of property within the 16 square miles of the Houston city limits has placed the assessed taxable value of the city of Houston at about \$122,000,000, against a total assessed valuation last year of about \$77,000,000. Simultaneously with the great advance in assessed valuation the tax rate has been reduced from \$1.70 on the \$100 to \$1.30, a reduction of about 23.5 per cent. The revenue thus raised will more than cover the annual budget.

With the increased valuation and the reduced assessment all individuals are relieved from taxation on personal property, such as money on hand or on deposit, notes, bonds, household goods and other personal effects. As this includes bank deposits, the total of about \$36,000,000 on the books of the banks in the form of deposits will be exempt from taxation.

The new assessed valuation places Houston on a parity with the greatest cities of the Southwest. Harris county, of which Houston is the county-seat, already leads the State by about \$6,000,000 in taxable values, but with the additional valuation of the city of Houston the total Harris county valuation will be about \$106,000,000.

The increased valuation of taxable property in Houston was made under the Somers system adopted by the city. Under this system unimproved property, held for the purposes of speculation, will be compelled to bear its proper taxable burden. Another leak the Somers system stopped was the disclosure of properties which never have been on the assessment rolls. This property will now be compelled to pay all accrued taxes and the increased valuation of the present year.

Under the Somers system the burden is placed alone upon unimproved property. Improved property will not suffer; in reality it will benefit by the decreased tax rate. The system merely equalizes the taxation burden, making the unimproved property pay as much as the progressive

property-owner who constructs improvements.

Capitalists and business men especially welcome the new order of taxation. The elimination of bank deposits and the reduced tax rate places Houston in a distinct position in the South, as it will attract capital because its finances will be freed of burdensome taxation.

The reason offered for exempting the personal assessments of individuals is that in former years less than 10 per cent. of the personal property-owners rendered such property for taxation, and being without a remedy to reach those that did not assess their personal property, the city officials decided that it was unfair to tax a few and allow the majority to escape.

Corporations will not be affected by the decision relative to the individual personal assessment, because their assessments are made on their capital stock, undivided profits and surplus at the same rate that real estate is assessed.

Although the tax rate has been greatly reduced, the city will receive an increased revenue this year because of the large increase in taxable values. The city's revenue will be several hundred thousand dollars greater than it was in 1911.

JEROME H. FABBAR,
Director of Publicity.

BIRMINGHAM IRON MARKET.

Sentiment Improved as Result of Reduction in Furnace Stocks.

[Special Cor. Manufacturers Record.]

Birmingham, Ala., March 11.

Furnace stock returns as of March 1, which have just been received, show the aggregate accumulation of all grades of pig-iron in this State to have been reduced some 25,000 tons during February. As a result of this showing mentioned, the sentiment in the market has improved decidedly, although the business now being transacted is but slightly larger than at the time of last report. It is understood that an additional furnace will be blown in on foundry iron during this week, making a total of 15 stacks in operation on such grades, which is a result of the increased rate of shipment against contracts now on order-books. The small orders that have been placed from time to time in the past few weeks have also required considerable tonnage, while the inquiries now pending represent a liberal tonnage in addition that is to be placed for early shipment. In practically all quarters of the trade the consuming interests are apparently more disposed to trade at the advanced asking prices, while the actual consumption by the smaller foundries has increased materially. Of the sales made in the past week, an aggregate of 2500 tons is reported sold in lots ranging from 150 to 300 tons each, all for comparatively early shipment. In addition to this, several lots of 500 tons each for shipment in the remainder of the first half were sold, besides a lot of 350 tons of especial analysis iron. The selling price reported in all of the transactions mentioned indicate the maintenance of a \$10.50 per ton Birmingham basis, with premiums received for such lots of gray forge and mottled as were sold. It is noted, however, that the sales made were confined to Southern territory. As to last half deliveries, the producing interests are still indisposed to commit themselves, but with two probable exceptions it is believed that the present basis for quotations would obtain for the third quarter at least. The basis just mentioned would not apply to the low grades, as such grades are only being offered for spot shipment.

In the basic market there is probably less tonnage available, and, so far as is known, no effort is being made to effect

sales, owing to the small accumulation on hand and the close adjustment of the output to the local consumption.

The market for charcoal iron is without new features, the several local producers adhering very closely to prices in line with those quoted below.

In the stock returns the accumulation of charcoal is not shown, but the aggregate of all other grades, which includes all storage yards in the State, is as follows, viz.: Free foundry, 125,000 tons; warrants, 45,000 tons; basic, 15,000 tons; total, 185,600 tons.

Current quotations for the several grades mentioned, and which apply to any delivery prior to July 1, are as follows per gross ton f. o. b. cars Birmingham, viz.:

No. 1 foundry, \$10.75 to \$11.
No. 2 foundry, \$10.25 to \$10.50.
No. 3 foundry, \$9.75 to \$10.
No. 4 foundry, \$9.25 to \$9.50.
Gray forge, \$9 to \$9.25.
Standard basic, \$10.25 to \$10.50.
Off basic, \$9.75 to \$10.

Standard charcoal iron, \$22 to \$23.

Dealers in old material adhere to asking prices as last revised, but do not report further improvement in the demand. Several small lots of light and machinery cast were sold in the week, and forwardings of steel grades to local mills were about equal to that of the week previous. The accumulation of all grades in this district March 1 was unusually small. Dealers' asking prices are quoted as follows per gross ton f. o. b. cars here, viz.:

Old iron rails, light, \$12 to \$12.75.
Old iron axles, light, \$12.50 to \$13.
Old steel axles, light, \$11 to \$11.50.
No. 1 railroad wrought, \$11 to \$11.50.
No. 2 railroad wrought, \$9.50 to \$10.
No. 1 machinery, \$9 to \$9.50.
No. 1 country, \$7 to \$7.50.
No. 2 country, \$6.50 to \$7.
No. 1 steel, \$8.50 to \$9.
Tram car wheels, \$8 to \$8.50.

Standard car wheels, \$9.50 to \$10.

Light cast and stove plate, \$6 to \$6.50.

Small orders for cast-iron water pipe, placed since last report, are attractive in the aggregate, and the schedule of prices has not been changed. So far as is known, no part of the St. Louis, Mo., requirement has yet been placed, and specifications for Chicago, of which mention has been made, are not yet in hand. Shipments from all local plants are still reported as about equal to the output, with order-book requirements representing several months' operations. Class "B," or water pipe, is quoted as follows per net ton f. o. b. cars Birmingham, Anniston and Bessemer, Ala., viz.: Four-inch to six-inch, \$23; 8-inch to 12-inch, \$22; over 12-inch, average \$21, with \$1 per ton extra for class "A," or gas pipe. Special fittings are quoted at from \$45 to \$55 per net ton at foundry, depending on size and quantity required.

None of the quotations on the several classes of finished material produced locally are reported as changed, and the volume of business being placed is still very satisfactory. Sales of light steel rails are being made from time to time, and the requirement of twisted bars for concrete reinforcement is attractive. Quite a large tonnage of structural material is soon to be required in this city proper for buildings contemplated that are in addition to the proposed hotel building. As to this last, the latest advices indicate that the bulk of the necessary capital has been arranged for, and that bids on the construction work will soon be asked. It is noted that it is proposed to expend \$1,000,000 in the undertaking referred to, and that plans for two additional hotel buildings to cost upward of \$500,000 each are under consideration. It is also probable that the construction

of steel viaducts over railroad grade crossings in this city will be ordered within the next six months.

The coal market is still very much interested in developments from the English strike, while considerable attention has been drawn to the anthracite fields, where labor disturbances are anticipated. So far the movement from Alabama has been affected but little by the heavy demand on Eastern coaling stations from foreign vessels, but all Southern consumers have evinced a disposition to accumulate stocks against a probable shortage at the mines, as well as more pronounced scarcity of railway equipment. In this last connection it is noted that more or less complaint is made by all local operators of the inability to secure equipment for the several movements, while an appeal has been made by certain of the railroad companies to the Alabama Coal Miners' Association for assistance in forcing the prompt return of cars that are delivered to connections. It is understood that the largest interest in the Birmingham field is to enter the market for 200 additional steel gondolas to insure the prompt delivery of coal to its several consuming plants, which will make a total of some 300 cars to enter the service of that company since a comparatively recent date. Spot deliveries of practically all grades produced locally are being quoted at premium prices, but the scale asked for contracts is but slightly higher than the prices obtained in the contract years that are now ending.

With the addition of one furnace to the active capacity, a larger number of ovens will be operated on furnace coke, but the producers of foundry coke have been operating to capacity for some months. The car shortage has also affected prices for favorite brands, and has caused considerable worry in making shipments to those of the consumers who do not have large storage capacity. The sale of a round tonnage of foundry coke has just been made to a Southern gas producer, and inquiries from similar sources are pending.

Fertile Pee Dee Lands.

Mr. W. C. Southard, secretary of the Marlboro Agricultural Co., Bennettsville, S. C., in a letter to the MANUFACTURERS RECORD gives some interesting information in regard to the fertile bottom lands along the Great Pee Dee River in South Carolina. At one time this was a navigable stream, but of late years these river lands have been allowed to lie out as waste, and there is not sufficient traffic at that point to justify river business at present. Mr. Southard writes:

"In Marlboro county, where a reputation has been established for cotton and corn growing, results have been accomplished on the upland sections, where land sells for \$200 per acre. This land rents for \$15 an acre, and labor costs to such sections. But there is better land in the county along the rivers which requires 50 per cent. less fertilizer, if any at all, and will not only pay for itself in a short time, but will be the coming section of the county. Many of the old plantations along the river were formerly diked, but these are to a large extent out of repair. These dikes can be reconstructed for \$1 per acre, and only twice in history have the farming lands along the river where diked been covered with water. These lands can now be bought for from \$15 to \$25 per acre, and besides being extremely rich farming lands, have the best of natural range for cattle and hogs. They offer unusual opportunities for groups of families to soon make a fortune if industrious and law-abiding. Vast acres of this land might be secured where large colonies or towns could be established."

VIRGINIA FARM LANDS.

Plan to Settle 10,000,000 Undeveloped Acres in the State.

Mr. W. D. Stockley of Norfolk, Va., writing to the MANUFACTURERS RECORD concerning the organization of the Virginia Farm Development Corporation, says:

"It is not gotten up in the interest of one particular community within the State, but purposely to act in a State-wide capacity, trying to develop as best it can systematically 10,000,000 acres of undeveloped farm lands in Virginia. When the location of Virginia's farm lands so far as their nearness to market and quickness of transportation is considered, the land values should be at least five times their present average value. Then the climatic condition of the State is such that in a large portion of it two to three crops, in hay crops as many as five or six, can be grown annually. It also will be noted that the crops which can be grown so quickly are such crops as pay more for the growing than the crops grown in the middle West, where lands are very much more valuable.

"Our agricultural resources are so rapidly expanding that it would be hard to express, so that the reader would believe it, the rapidity with which our lands are increasing in value. Along the seaboard the land values have increased from 200 to 600 per cent. within the last 10 years. The increase in farm land values in the

United States, taken as a whole, within the last 10 years has been 118 per cent., as fixed by the census bureau, whereas the increase in farm land values in the South to the extent of 340,000,000 acres has been 230 per cent. It has been shown from a compilation of figures made by the MANUFACTURERS RECORD that the increase in bank deposits and resources within the State in the last 10 years has been from \$87,000,000 in round numbers to \$269,000,000, or over 300 per cent., whereas the property values within the State have increased in the same time over \$548,000,000. Governor Mann in a message written for the MANUFACTURERS RECORD on Thanksgiving, 1910, predicted that within five years the increase in farm land values, which at present are ridiculously cheap in Virginia, would be from three to five times their present value. This could easily be done, and at the same time the purchaser be given good values for his money.

"The object of the corporation is to purchase, subdivide and improve real estate within the State, encouraging immigration, and to have a department which shall work in conjunction with the department of agriculture of the State, so as to instruct the newcomer as to how easiest, cheapest and best to improve our soil, which is so susceptible to improvement; where, when and what crop best to plant. The undertaking as a State-wide one is contemplated, as thereby desirable immigrants can be encouraged and located in any section of the State preferred by them, where what they want to grow can be most successfully grown and marketed. The agricultural resources of the State are such that fruits, hay, grain, stock-raising or vegetables have their respective locations for ideal production."

Building at Birmingham.

Chamber of Commerce,
Birmingham, Ala., March 7.

Editor Manufacturers Record:

At Birmingham during the year 1911 there were completed by-products plant of the Tennessee Coal, Iron & Railroad Co., \$2,500,000; by-products plant of the Woodward Iron Co., \$750,000; plant of

the American Steel & Wire Co., \$3,500,000; car shops of the Louisville & Nashville Railroad Co., \$1,000,000; Y. M. C. A. Building, \$250,000, and Young Women's Christian Association Building, \$75,000.

The total number of building permits issued in Birmingham during the year were 3440, at a total cost of \$3,554,157.

There were 26 new industries located in Birmingham during the year and 9 wholesale concerns, besides a large number of agencies desirous of reaching the Southern territory.

Among important projects in course of completion are the 20-story building of the American Trust and Savings Bank and the Interurban Railway line of the Tidewater Development Co. At the present time, in addition, there are under construction and authoritatively announced. Two hotels of \$1,000,000 each; a theater and bachelor apartment-house, \$350,000; a new family apartment-house, \$150,000; four storehouses erected by W. H. Graves, \$100,000; furniture warehouse, \$40,000; a new store, \$25,000; Dangax buildings, \$30,000; Temple Emanuel El, \$110,000; Cumberland Presbyterian Church, \$12,000; three family apartment-houses, \$30,000; Loveman, Joseph & Loeb's shipping station, \$6000; Birmingham Railway, Light & Power Co.'s cooling towers, \$150,000; Alabama Penny Savings Bank, \$40,000; stores by Jemison Real Estate & Insurance Co., \$25,000—making a total of \$3,318,000.

Manufacturing plants in course of erection are the sulphuric-acid plant, costing \$250,000, and the Barrett Manufacturing Co.'s new plant, \$250,000.

JOSEPH B. BABB, Secretary.

Analyzing Coal and Coke.

In order to supply the constantly-increasing demand for information relating to the methods used by the Bureau of Mines in analyzing coal and coke, the bureau has just issued Technical Paper No. 8, by Frederick M. Stanton and Arno C. Fieldner. This technical paper describes the methods in use at the laboratories of the bureau for analyzing coal and coke and determining the heating value of these fuels. The fuel investigations being conducted by the Bureau of Mines had their inception in the work done at the Government coal-testing plant erected in 1904 at the Louisiana Purchase Exposition, St. Louis, Mo., and the analytical methods originally used by the chemists at that plant have been followed without much change in the subsequent chemical work of the fuel-testing plants at St. Louis, Norfolk and Pittsburgh. The paper describes the original methods (which were those recommended by the committee on coal analysis of the American Chemical Society), and such modifications and changes as experience has shown advisable. Copies of Technical Paper No. 8 may be obtained by writing to the Director of the Bureau of Mines, Washington, D. C.

The International Congress of Chambers of Commerce will be held at Boston, Mass., September 24-28, and at its conclusion it is expected that about 100 of the foreign delegates will make a tour of some of the principal business centers of the country. Mr. Richard J. Walsh, editor of the *Chamber of Commerce News* of Boston, is interested in seeing that the congress shall be a success.

Building operations representing an expenditure of \$1,166,200 are now under way at Corpus Christi, Tex. They include one hotel costing \$412,000, one hotel costing \$100,000, \$130,000 Federal building and 32 private residences costing \$64,000.

Wide Interest in the South.

Letters of congratulation and commendation of the thirtieth anniversary issue of the MANUFACTURERS RECORD continue to come in from different parts of the country, and they manifest not only the widespread interest of the country in the development of the South, but, in giving orders for copies of the issue to be sent to others, a determination to have others share that interest and enjoy the means of becoming thoroughly acquainted with the wonderful progress of the South in the past 30 years and with its vast opportunities for the future. Among the letters in addition to those which were published in our issues of February 29 and March 7 are the following:

Douglas H. Thomas, president Merchants' National Bank, Baltimore, Md.:

"It is a remarkable piece of typographical work, and the information it contains is of the most valuable character and encouraging to all those especially interested in that section of the country. I have carefully preserved the various books issued by your company containing statistics concerning the South, and although some of them are quite old, have had occasion to refer to them within the last year. 'Thirty Years of Southern Upbuilding' is a valuable addition to any library, and I shall gladly place it on the shelf in my library handy for reference."

Wm. C. Seddon, 52 Broadway, New York, N. Y.:

"It has taken me some time to read the thirtieth anniversary number, but I must express the great pleasure its perusal and study gave me. It is a wonderful compilation of statistics and full of valuable information, and I shall place it in my library as a book of reference. You and your staff deserve great credit for the work you have done in placing before the public this publication."

Rutledge Smith, industrial agent Tennessee Central Railroad Co., Cookeville, Tenn.:

"I do not hesitate to say that it is the greatest publication of its kind ever produced; in fact, there is nothing in a class with it. The information compiled and originated in this publication is of vast and far-reaching importance in Southern development, and I predict that this issue will have a telling effect upon industrial progress in this great Southland, the richest area upon the American continent. Your work is and should be appreciated by everyone interested in the South. This is amply demonstrated by the success that has come to both you and this section. It is a pleasure to give honor to whom honor is due, and you are entitled to the lion's share in this work."

Wm. J. Castell, stocks, bonds, etc., New Orleans, La.:

"Not only is this volume up to your usual high standard in every respect, but it is gotten up in such a way as to be most valuable as a book of reference for all those who are interested in Southern industry and commerce. It will have a prominent place in my library, and will be freely used by me. I extend to you personally and the MANUFACTURERS RECORD my congratulations on the anniversary of 30 years of intelligent effort for the good and uplift of the South."

Marcus E. Sperry, Marcus E. Sperry & Co., Tampa, Fla.:

"We have seen the edition, and feel that too much could not be said in commendation of your work. Individually, we appreciate the good position given our advertisement, and feel that this advertisement is not only of present, but of permanent value, in view of the broad distribution which your edition will undoubtedly have and the fact that it will constitute a reference work on the South. We wish also to say that we have found our advertisement in your paper productive of numerous inquiries, and none seem to be from curiosity seekers. We are frank to state that, while we may advertise in other mediums, that we have yet to find a medium that we consider an equal of yours for the advertising of our particular line."

J. W. Parker, district manager E. Keeler Company, Philadelphia, Pa.:

"A man would have to read it several times to thoroughly digest the great amount of very interesting information contained in it. We have not put this book in our regular file, as the writer, after allowing it to remain in the office so that others could look it over and read it, has appropriated it for his personal library use at home. I cannot properly express the compliment which I would like to pass upon you on account of this book. It is an extremely interesting thing, and especially to men of Southern birth, as is the writer, hailing from the State of Louisiana, and I would like to say that I take a patriotic interest in it as well as an appreciative student of the development of our country."

T. D. Roberts, Baltimore, Md.:

"You and your co-workers, in both the editorial and business departments, and from a typographical view point; also the printers are to be congratulated. As an exponent of the South's resources and possibilities it is the best publication extant and a wholesome addition to any library."

J. T. Scott, vice-president the First National Bank of Houston, Houston, Tex.:

"I have read over with a great deal of interest this special issue of your worthy journal, and believe beyond a question of doubt that it is the most comprehensive write-up of the South and its great progress during the past 30 years that has ever come to our attention. We are glad to have contributed in a small way to this special edition, and believe that our section of the country will be greatly benefited through the facts and figures given therein."

J. J. Campion, vice-president Carolina, Clinchfield & Ohio Railway, Johnson City, Tenn.:

"The staff of the MANUFACTURERS RECORD is deserving of much credit for having devised and published this important information in such complete shape."

The Robins & Myers Company, Springfield, O.:

"You certainly deserve more credit than we believe it is possible for you to obtain for issuing such a publication. There is no doubt but that this will be an invaluable

permanent reference. It surely contains interesting data. We consider ourselves fortunate in having been given an opportunity of making our announcement in its advertising pages."

Viele, Blackwell & Buck, consulting engineers, New York, N. Y.:

"We congratulate you on the excellent appearance of this publication and on the large amount of valuable information which it contains."

Wm. F. White, president the White Investing Co., New York, N. Y.:

"You are to be congratulated on the comprehensive and splendid character of the volume, which should result in giving fresh impetus to the growth of the South."

T. B. Hilton, Barney & Hines, Inc., Memphis, Tenn.:

"'Thirty Years of Southern Upbuilding' is certainly a fine piece of work, educationally as well as mechanically."

Austin Gallagher, industrial commissioner the Western Maryland Railway Co., Baltimore, Md.:

"In producing 'Thirty Years of Southern Upbuilding' you have shown a degree of enterprise seldom, if ever, surpassed in journalism. It fills a great want, and its excellence will make it a standard work of reference not only in the South, but throughout the entire country among students of conditions in the United States. I congratulate you and your staff on your great accomplishment."

T. L. Millard & Co., Huntington, W. Va.:

"It is a splendid edition, showing the great and vastly improved conditions of the South."

C. W. Duke, Tampa, Fla., State vice-president for Florida Home Mission Board of the Southern Baptist Convention:

"It is a fine piece of work, and reflects credit upon our glorious South. I sincerely thank you, and I hope to make valuable use of its data."

Adolph Boldt, secretary Chamber of Commerce, Houston, Tex.:

"I cannot recall that any publication has ever reached me that contains more valuable information and which will be of greater assistance in the conduct of our office affairs. As a book of reference it will be invaluable for many years to come. I congratulate you most sincerely upon the general make-up of this publication."

Bankers' Trust Co., Houston, Tex.:

"May we join the many other people in the South in congratulating you upon so worthy a task so well done?"

C. B. Groff, the Prince-Groff Company, Camden, N. J.:

"It gives a very clear conception of the splendid field the South offers for business."

John A. Roebling's Sons Company, Trenton, N. J.:

"This is the most interesting and instructive publication, and will serve as a valuable reference book."

John J. Cornwell, president South Branch Board of Trade, Romney, W. Va.:

"This is certainly the most valuable publication as relating to the South and its development which has ever come from the press. It is a storehouse of information, and will for many years be the textbook on Southern progress and development."

Rev. Carter Helm Jones, Oklahoma City, Okla.:

"I have long been a great admirer of the MANUFACTURERS RECORD, and beg leave to congratulate you on the splendid service you have rendered through this medium, not only to the South, but to the nation as well."

Wesley Merritt, industrial commissioner the Atchison, Topeka & Santa Fe Railway system, Chicago, Ill.:

"We will keep this copy in our office library as a source of valuable and certain reference. The edition is highly creditable, and the write-up matter fine even beyond the high-set mark of our expectations. We are pleased with being able to participate in the issue."

W. R. Philips, secretary Business Men's Club, Gadsden, Ala.:

"You have certainly done yourself proud in this epoch-making work and in showing the South in its land of promise by contrast. This magnificent work should find its way into the hands of every patriotic, public-spirited citizen in the South, and a ready sale in all parts of the United States and abroad to those seeking the truth about the South, which is destined to become one of the greatest sections in the world."

O. H. Reinhart, secretary the Milton Manufacturing Co., Milton, Pa.:

"We wish to congratulate you on the superior nature of this edition. We consider it a very attractive and instructive volume."

Jackson Reuter, president and treasurer Northern Water Softener Co., Madison, Wisconsin:

"I feel that the MANUFACTURERS RECORD is deserving considerable credit in the up-building of the Southern States. Your untired efforts in getting before the public the advantages of the South has been favorably commented upon by me many times, as I have known the MANUFACTURERS RECORD for at least 15 years. There are many valuable things in your issue, and I have taken the copy home, and at my leisure will peruse the contents more carefully."

Rev. Dr. Robert S. MacArthur, Atlanta, Ga.:

"Mr. Richard H. Edmonds, editor and general manager of the MANUFACTURERS RECORD, deserves and receives the hearty congratulations of his numerous friends on the issuance of the number of this magazine, which celebrates its thirtieth birthday."

This number contains elaborate statistics of the thirty years of Southern upbuilding, a period which is synchronous with its own birth and life. The predictions regarding the progress of the South have been more than fulfilled. Weekly it has published illuminating and inspiring facts. It is not too much to say that the MANUFACTURERS RECORD has been and is no small part in this upbuilding. It is the source of most interesting facts, collated with the utmost care, regarding progress on all lines of enterprise in the South; indeed, the MANUFACTURERS RECORD ought to be the *vade mecum* of every merchant, manufacturer, banker, and every other progressive business man in all parts of our broad land."

John C. Whiteside, New York Leather Belting Co., New York, N. Y.:

"After most carefully reading the special issue of the MANUFACTURERS RECORD entitled 'Thirty Years of Southern Upbuilding,' I feel that a great pleasure has been afforded me, and it is but due that I send you a letter telling you that the issue is the most complete and best gotten up and most powerful description of the South I have ever seen. Not only is it indicative of the capacity and scope of the MANUFACTURERS RECORD, but it is very valuable both as a development and advertising medium of the section. Having Southern blood in my veins, and having lived South, I particularly appreciate your efforts."

H. B. Worth, Greensboro, N. C.:

"Your thirty years progress edition should be in every library for reference. It is superb."

J. H. Eddy, the Kaul Lumber Co., Birmingham, Ala.:

"We shall be very glad to give it place in our office library, congratulating you upon this achievement."

The American Sheet and Tinplate Co., Pittsburgh, Pa.:

"This is one of the finest and most comprehensive works of this kind we have ever seen, and reflects great credit on the editorial and mechanical force of the MANUFACTURERS RECORD. It will surely help in advancing the interests of the great and growing South."

Southern Pipe Covering Co., Richmond, Va.:

"Please accept our commendation of this appreciated compendium of valuable information. We will give same an honored position in our office library."

E. C. Mayo, vice-president the Baltimore Machine Products Co., Baltimore, Md.:

"The edition is certainly a credit to the staff of the MANUFACTURERS RECORD, and the information contained therein may almost be said to be of a startling nature to those that have not kept up with the progress of the New South."

Rev. B. D. Gray, Home Mission Board of the Southern Baptist Convention, Atlanta, Ga.:

"The exhibit you make on Southern progress is stupendous, and would be bewildering beyond expression but for the rare skill displayed in marshalling the facts and figures and underlying ideas of Southern progress. Yours is the strongest voice that speaks for the South, and this great exhibit of Southern progress will be of incalculable value to our great section of the country."

Frederick D. Herbert, general sales manager the Terry Steam Turbine Co., New York, N. Y.:

"We congratulate you on this successful undertaking."

Eugene A. Wilson, Port Bolivar City Co., Galveston, Tex.:

"It is the merest due to this work to say that it is an ably-prepared encyclopedic summary of the industrial situation and development in the South, and that the South, 'more than yourselves, is to be congratulated upon its publication."

Rev. Dr. O. C. S. Wallace, pastor First Baptist Church, Baltimore, Md.:

"It will have a place among the peculiar treasures of my library, and I shall often find it exceedingly helpful, as I seek to become better acquainted with the South, which you so much love and for the upbuilding of which you have performed so great a service in the last 30 years."

Edward Slye, the Medical Standard Book Co., Baltimore, Md.:

"Your people may well feel proud of your big 30 years old infant. It surely is a winner."

J. M. Culp, vice-president Southern Railway Co., Washington, D. C.:

"It is a most interesting publication, and a perusal of it will, I am sure, do more to advertise the South and its progressiveness than any other publication I have recently seen."

C. P. Ludwig, general manager Alabama Consolidated Coal & Iron Co., Birmingham, Ala.:

"I consider this one of the finest works of its kind I have ever seen, and I heartily congratulate you on the successful issue of this book. It contains a world of information which is very handy for reference at any time."

Joe H. Eagle, Houston, Tex.:

"It is particularly gratifying to me to have so vast a volume of such absolutely accurate and useful statistical matter in my library. I have long looked on the MANUFACTURERS RECORD as the most useful publication in the South. Formerly our foremost men all ran to politics, nowadays, fortunately, our foremost men are largely running to legitimate business enterprises which develop the country. And the MANUFACTURERS RECORD has been and is being an enormous help to that commendable effort."

O. W. Crawford, vice-president, Louisiana Farm Lands Co., New Orleans, La.:

"Great men of affairs, in interviews and speeches, give out startling, important, ponderous facts and statistics. We hearers and readers are amazed at their deep learning and ready acceptance with great problems. Again, they startle us with

prophecies and logical climaxes, to which we assent with asperated exclamations of wonder. We know it is not second sight. Where do they find the facts and figures? When do these busy men have time to acquire and assemble them? It is very much explained to me by your very wonderful work, 'Thirty Years of Southern Upbuilding,' for which I heartily thank you. I have marked 17 articles in it for study and use. I find in your book history and prophecy, and have already received from it inspiration and enthusiasm. The Southern man who will read this volume will find his mental horizon widened as he reads. It will fill his mind with civic pride and his heart with home love. It was the ethics of Aristotle that, 'He who thinketh himself worthy of great things is in truth worthy.' Contemplating the scroll you unfold, I ask, 'Of what great thing is the South not worthy?'

C. H. Thompson, vice-president Darby Coal Mining Co., Darbyville, Va.:

"It is hard to imagine a more absorbing work than you have made of this special number. I am glad to add my congratulations to the already long list."

J. F. Jackson, agricultural agent, Central of Georgia Railway Co., Savannah, Ga.:

"Not only interesting, but a most valuable work of reference."

R. C. Ricker, Cincinnati, O.:

"It is certainly a work that you may well be proud of."

E. P. Alldredge, corresponding secretary, The Baptist General Convention of New Mexico, Portales, N. Mex.:

"It will be of great benefit to us, as it most certainly will be to everyone interested in the progress of the South."

George Frank Lord, E. I. Dupont-DeNemours Powder Co., Wilmington, Del.:

"This is certainly a handsome book, and contains very valuable material, to which I shall be pleased to refer."

John A. Miller, president, Clinchfield Portland Cement Corporation, Kingsport, Tenn., Nazareth, Pa.:

"We are certainly delighted with this copy, and beg to tender you our congratulations upon its fine appearance. It is a worthy presentation of the phenomenal progress made by the South in industry and commerce."

Frank Van Sant, attorney-at-law, Washington, D. C.:

"I will take this occasion to compliment you not only on the anniversary publication, but for the very high standard maintained by the MANUFACTURERS RECORD. To my mind it is the highest class business journal in the country."

Wm. B. Reily, president, The Reily-Taylor Company, New Orleans, La.:

"This is indeed a wonderful piece of work. None but masterful men could have accomplished it. This book of yours shows a marvelous advance in our Southern country, but it is nothing in comparison to what it would be had we more such men as yourselves working as you are doing. We never leave anything undone that we can do for the MANUFACTURERS RECORD."

H. P. Clarke, The A. Wilhelm Company, New York:

"We are sure it will be a very great factor in the development of the South."

Swedish Iron & Steel Corporation, New York:

"We think this is one of the most interesting issues that has ever been published by any technical paper. It appears to contain a lot of very interesting and useful information."

J. Newton Johnston, consulting civil engineer, Florence, S. C.:

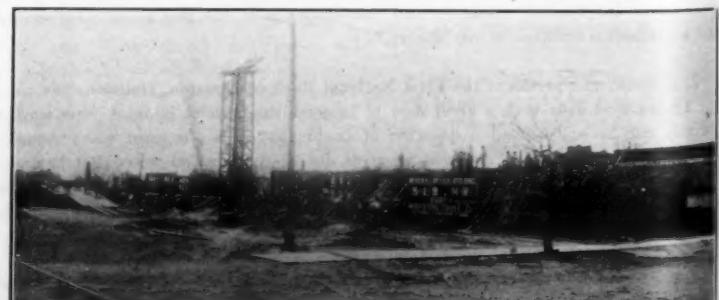
"It is a valuable issue, and worthy a place in all libraries of progressive men."

S. W. Travers, treasurer Virginia-Carolina Chemical Co., Richmond, Va.:

"I am pleased with its merit and impressed with its value."

R. M. Martin, managing director, Chamber of Commerce, Dublin, Ga.:

"The whole South should feel proud of your recent publication, 'Thirty Years of Southern Upbuilding.' It is certain to prove of immense value to its every reader. I have always contended that the best way to educate and advance man was to let him know what was in him. Likewise, I contend that the best way to advance a section or community is to let it know what it has. This has never before been so ably done as by your publication. I congratulate you in the name and behalf of the organization of which I am managing director, as well as for myself personally."



FRISCO OFFICE BUILDING, KINGSVILLE, TEX.

Under construction for St. Louis, Brownsville & Mexico Railroad; two stories; steel and concrete construction; cost about \$75,000; architect, Louis Curtiss, Kansas City, Mo.; contractor, Manhattan Construction Co., St. Louis. This is first of four structures to be erected at Kingsville by Frisco System; others to include hotel to cost \$200,000, passenger station to cost \$75,000, freight depot, shop building, etc.

IRON AND STEEL WORKS.

Second Supplement to the Directory for the United States.

Many years ago, because of the rapid expansion of our iron and steel industries and the greatly-increased demand for prompt information concerning the details of this expansion, James M. Swank, general manager of the American Iron and Steel Association, No. 261 S. 4th street, Philadelphia, found it necessary to issue from time to time carefully-prepared Supplements to its directory. It could not, nor could any trustworthy agency, compile and publish a new edition of the Directory, with all its technical and other details, with sufficient frequency to meet the wants of the American iron trade. It now presents to the trade another Supplement, printed and bound in the same style as its predecessors. This Supplement and its predecessor in 1910 bring down to the close of 1911 all essential details concerning new iron and steel plants which have been completed or undertaken since the appearance of the Directory in 1908; also important changes that have since taken place in the ownership and equipment of plants that had previously been described.

Nor does this Supplement stop with the details above referred to. Appreciating the need by the iron trade of a complete list of the blast furnaces of the United States that were in existence or were under construction at the end of 1911, whether built or undertaken since the appearance of the Directory of 1908 or previously, it has carefully compiled this list and also gives a list of the blast furnaces which have been abandoned or dismantled since that edition of the Directory was published. Supplementary to the information concerning blast furnaces is opened a new department devoted to the electrical and ferro-alloy plants which are identified with the iron trade or are largely dependent upon it.

In the Supplement which was printed in 1910 were given classified lists of the manufacturers of steel ingots and rolled products that are described in the Directory, and also of the manufacturers of steel castings, tinplates and terneplates, and other products which have been described in its pages, the whole brought down to March, 1910. With that Supplement and this Supplement before him the manufacturer or business man who has our Directory on his desk will not lack ample information concerning the equipment and ownership of all our blast furnaces, rolling mills, steel works and tinplate work.

It will not be possible to compile and publish another edition of the Directory in 1912. Late editions have embraced about 500 printed pages. To gather entirely through correspondence the information for a volume of this size and publish it in less than 12 months, while not neglecting the other work of our office, is a physical impossibility.

The Second Supplement fills 80 well-printed pages. It is well bound to correspond with the Directory. Price \$5 per copy. Both Supplements will be sent for \$10.

New Boat Lines in Maryland.

A report from Easton, Md., says that the Eastern Shore Development Co., represented by Andrew J. McIntosh and Edward P. Palmer, is contemplating the establishment of a regular line of steamboats between Claiborne, Md., a railway terminal on the eastern shore of Chesapeake Bay, 15 miles from Easton, to Annapolis, connecting there with the electric railways now operating from there to Baltimore and Washington and affording much shorter

schedule between Claiborne and both cities than is now possible by the steamers running between Claiborne and Baltimore.

In connection with this report it is interesting to note the organization at Baltimore of the Maryland Steamboat Co. to operate steamers on the Chesapeake and its tributaries. Whether it has any connection with the Claiborne enterprise does not appear. The officers are: President, George D. Weaver; vice-president and general manager, W. P. Lawson; secretary, Roland B. Haynie; treasurer, Lewis C. Caltrider.

Another fact of particular interest in respect to the Chesapeake Bay traffic is the decision of the Baltimore, Chesapeake & Atlantic Railway Co., which operates the steamers from Baltimore to Claiborne and the railroad from there to Ocean City, Md., to build at the yards of the Maryland Steel Co., Sparrows Point, two up-to-date boats at a cost of \$387,000.

For a Packing Plant.

Simon Whitestone of the Texarkana Trust Co. is an enthusiastic advocate of the establishment of a meat-packing plant at Pine Bluff, Ark., and in connection with that in the encouragement of stock-raising in the vicinity to supply the plant. In a recent interview he said:

"My associates want it strictly understood that they are interested in the development of the State, and are locating this plant at Pine Bluff because the city offers opportunities and gives advantages that cannot be obtained elsewhere. Pine Bluff has the advantage of a central location, the undivided support of the business men, and lower freight rates, and cattle can be shipped in and out at a saving of 50 per cent. over competing points. It is a great chance for the farmer to come into his own and reap the benefits of unrealized advantages."

To Discuss Taxation.

Manufacturers of Tennessee will meet next Wednesday at Nashville to consider the question of taxation with special reference to the manufacturer. In preparation for the meeting a department of the Board of Trade has been organized as the Nashville Manufacturers' Association, with T. F. Bonner president and E. S. Shannon secretary.

The Factory. By Jonathan Thayer Lincoln. Publishers, Houghton, Mifflin & Co., Boston. Price \$1.

Jonathan Thayer Lincoln, a well-known millowner of Fall River, Mass., delivered a course of lectures designed to establish a better social understanding between the man who buys labor and the man who sells labor. These lectures, which were given before the Amos Tuck School of Administration and Finance at Dartmouth College, were the basis of this essay, "The Factory." In seven chapters are discussed the industrial revolution, Sir Richard Arkwright, mechanical inventions, the factory system, the factory town, chartism and the factory and social progress, the whole forming a compact, instructive and suggestive study of the factory system from the days when invention of machinery compelled it until today, with its hopes and dangers.

The short course in domestic science to be given at the Maryland Agricultural College March 18-23 has been arranged for the special benefit of present or prospective housekeepers. Among the topics to be discussed are first aid to the injured, household chemistry, bacteriology, planning meals, principles of cooking and the care of milk.

GOOD ROADS

WEEK'S HIGHWAY RECORD.

Progress in Southern Road and Street Improvement.

[Full details of highway undertakings are given in the Construction Department.]

Bonds Voted.

Livingston, Tenn.—Overton county voted \$150,000 bond issue for road construction.

Newton, N. C.—Newton township of Catawba county voted \$50,000 bond issue for road construction.

Bonds to Be Voted.

Bastrop, Tex.—Bastrop county road precinct votes April 2 on \$100,000 bond issue to construct 40 miles of road.

Cedartown, Ga.—City votes April 8 on \$20,000 bond issue for street paving.

Fredericksburg, Va.—City will vote on \$30,000 bond issue for street improvements.

Hillsboro, N. C.—Orange county will vote on \$250,000 bond issue to construct macadam roads.

Mannington, W. Va.—Mannington district will vote on \$250,000 bond issue for improving 25 miles of road.

San Benito, Tex.—City votes April 6 on \$18,000 bond issue for street improvements.

Contracts Awarded.

Bonham, Tex.—Anderson Construction Co., Dallas, Tex., has contract for 15 blocks of concrete sidewalks.

Dallas, Tex.—Dallas county awarded contract for constructing three miles of rock road.

Fitzgerald, Ga.—City awarded contract for paving four blocks with vitrified brick on four-inch concrete foundation.

Fort Mill, S. C.—City awarded \$3875 contract to improve street with bitumen binder.

Hannibal, Mo.—City awarded contract for 100,000 square feet of sidewalks.

Richmond, Va.—City awarded \$25,000 contract for curbing, flagging, paving, etc., in connection with laying pipe sewers.

Terrell, Tex.—City awarded contract for 4447 linear feet of concrete sidewalks.

Contracts to Be Awarded.

Asheville, N. C.—City opens bids March 15 for 10,000 to 20,000 square yards of concrete sidewalks.

Bluefield, W. Va.—City receives bids until April 5 for bituminous macadam and concrete curb and gutter—about 38,000 square yards of pavement.

Carrizo Springs, Tex.—City will expend \$6000 for street grading and bridge building.

Chatom, Ala.—Washington county receives bids until April 6 for grading, draining and surfacing five miles of road.

Corpus Christi, Tex.—City will expend \$150,000 for street improvements.

Crenshaw, Miss.—Town invites bids for 28,000 square feet of concrete sidewalks.

Guntown, Miss.—First District of Lee county will construct 12 miles of gravel road, 6 inches deep by 11 feet wide, to cost \$50,000, including grading, hauling, etc.

Little Rock, Ark.—City will construct 16,850 square yards of paving.

Little Rock, Ark.—City receives bids until March 20 for 10,000 square yards of paving with macadam, tarvia macadam or bituminous concrete, grading, draining and curbing.

Little Rock, Ark.—City will expend \$30,000 to \$40,000 for about 302,400 square feet of asphalt, creosoted blocks or vitrified brick on concrete base.

Louisville, Ky.—City opens bids March 18 for granitoid sidewalks on various streets.

Lumberton, N. C.—City will lay bituminous macadam costing about \$10,000.

Lynchburg, Va.—City receives bids until March 23 for 50,000 cubic yards excavation, 18,000 cubic yards trench excavation, 56,000 square yards paving and 23,000 linear feet curb.

Mt. Sterling, Ky.—City will expend \$25,000 to construct 12,000 square yards of brick pavement on concrete foundation.

Newberry, S. C.—City receives bids until March 20 for 5000 square yards of vitrified block paving.

Portsmouth, Va.—City receives bids until April 2 for granite block paving and old bluestone or new granite curbing.

Spencer, Tenn.—Van Buren county opens bids March 30 for constructing pikes to cost \$50,000.

Terrell, Tex.—City will expend \$45,000 for water-works and street improvements, to include 20,000 square yards of paving.

Untown, Ala.—City invites bids on concrete walks, curbing and gutters; cost \$10,000.

Washington, D. C.—District has ordered street improvements to cost \$125,000.

Wilmington, N. C.—City received bids until March 12 for 9000 square yards of granite block paving and 10,000 square yards of sidewalks.

Orange, Tex.—Orange county will construct 150 miles of shell and gravel roads costing \$200,000.

GOVERNOR SANDERS INTERESTED

Plans of His Company to Further Good Roads Building in the South.

[Special Cor. Manufacturers Record.]

New Orleans, La., March 9.

The announced purpose of the Petrolium Good Road Development Co., a Louisiana corporation of which Governor J. Y. Sanders is president, is to provide facilities for the construction of "metal-surfaced" roads in all the 14 Southern States south of the Potomac and east of the Rio Grande. The company has perfected its organization and has opened offices in the Hibernia Bank building here, and is ready for business, although Governor Sanders will not be in position to devote his entire time to the company till after his term of office expires in May. Nevertheless, all the plans and preliminaries for the comprehensive operation of the company on a basis that will cover the entire South have been carried out, and the company is preparing for active business without delay.

Governor Sanders has been an aggressive good-roads champion throughout his administration as Governor, and was an earnest advocate of the good-roads law which has been engrafted into the Constitution of the State, by which a tax of one-quarter mill will be levied for all time for purposes of good-road construction and maintenance. State engineers have charge of the work, which can only be done in accordance with plans approved by them. Already some 12 parishes have availed themselves of the opportunities this arrangement provides, and in the course of time, in accordance with the plans of the officials, there will be good roads connecting every county-seat in the State.

Governor Sanders' company will operate through county organizations everywhere throughout the South, building roads with the machinery and equipment controlled by it in Southern territory. Howard Egleston, the company engineer, will be supervising engineer in every subcontracting company, so that every piece of work will have to be up to the standard. As soon as his term of office expires Governor Sanders will visit the leading counties in

all the Southern States and personally work up interest in the organization of subcompanies. His ability as an organizer and a man to infuse enthusiasm in any cause he espouses is considered a guarantee of the success of the effort to arouse public interest in good-road construction wherever he goes.

The company has secured the patent rights on various road-making machinery which has been given a tryout in California during the past 11 years.

Governor Sanders made a statement to the following effect:

"I have felt for many years that one of the most important matters before our people, especially in the Southern States, was the construction of suitable roadways by which the people of the various localities could readily communicate with each other at all times of the year, and over which all products of the soil can be freely transported in all conditions of weather, the producer in this way being able to take advantage of the best market prices.

"One of the greatest causes of the fluctuation in the prices of staple articles is due to the impossibility to transport products of the soil promptly from the farms to the railroads. In good weather this movement is so great that the railroads are unable to handle the immense amount of tonnage offered them. At other times, when the need is just as great for this material, the bad condition of the roads make movement over them impossible and the foodstuffs and other materials required for consumption are unattainable.

"Believing this, I undertook to bring the question of good roads prominently to the front during my administration as Governor of Louisiana, and the result of the good-roads propaganda in this State has been the passage by the Legislature during the session of 1910 of a good-roads law which is regarded by many as the best law of this character upon the statute books of any of the States.

"It was, therefore, with very great pleasure that I received the proposition to identify myself with the company formed for the purpose of developing the construction of model good roads throughout the Southern States, and I purpose, when I am free from the gubernatorial office, to devote my energies very fully to this matter.

"It is not the purpose of the company of which I shall be the head to do any construction work itself other than where it may be necessary for a practical demonstration of the merits of the system, but to organize operating companies wherever the funds are available for the construction of good roads, and, by the aid of the very thorough equipment of special machinery which these companies will possess, to insure the building of high-class roads at a minimum cost to those who pay for them.

"It is our intention that this form of road construction shall be popular in every sense—popular for its good qualities for riding and driving over, and popular for the very moderate price at which it will be constructed.

"The companies when organized will do their work under the specifications and under the supervision of the chief engineer of the development company, who will be responsible for the good execution of all work undertaken.

"The gentlemen who have organized the development company have gone into it with the distinct and clear understanding that no poor work would under any circumstances be executed; that no attempt would ever be permitted to lower the standard of construction set forth in the specifications, which are standard with

the company for this class of road-building. We hope in this way to avoid cause for the complaints which are often made of poor work, due to the desire of the contractor to make the last dollar possible out of the work he has undertaken, believing that ultimately a system of road-building founded on scientific principles, carefully and conscientiously carried out, will extend itself wherever good roads are desired, and that under no circumstances would it be profitable to so lower the standard as to give rise to any cause of complaint regarding the quality of the construction work done.

"The fundamental principle of the construction is based on the use of a peculiar rolling tamper, called in California 'the sheep's-foot roller,' the idea of which was suggested to the inventor by his following a flock of sheep across a plowed field on a hard beaten road, where a short time before there was a foot of loose fine earth. Applying this principle to the roadway, the ground is first broken up by a plow specially designed so as to cut out and break up all inequalities of surface down to a level, where the original earth has been undisturbed. This broken soil is made fine by the use of various instruments until almost in a condition for planting seed. It is, if not found sufficiently damp for good packing, sprinkled with the proper quantity of water by means of sprinkling carts and cultivated by machinery until the entire mass is in a suitable condition for thorough compaction.

"The rolling tamper is then set to work and drawn back and forth over the ground, the legs sinking through the fine earth to the hard ground which was left unplowed, and gradually, at the rate of not more than one-eighth of an inch at a time, building up a dense mass of earth as hard as 'hardpan,' until finally the little feet pass over the compacted surface without making any impression. What the amount of this compression is will be readily understood when it is known that the rolling tamper weighs between 5000 and 6000 pounds, and that the weight on each one of the feet which compress the earth exceeds 500 pounds.

"A further idea of the density of this foundation when so built will be derived from the fact that the soil so treated is compressed to the extent of nearly 30 per cent. of its bulk, so that, whereas a cubic foot of natural soil may weigh 90 pounds, the same material when compacted with our tamping roller will weigh 120 pounds per cubic foot, only 15 pounds less than limestone.

"This system of road-building, therefore, is not a paving system, but a foundation building system, and deals with the most important element of good road construction. No matter what the surface material may be on any road, the road will be just as good as its foundation permits it to be, and no better. If the foundation is imperfect, and there are places in it less enduring of weight than others, the surface material will eventually be hammered down at that point and traffic will ultimately cause the destruction of the road. Whereas if the foundation is uniformly durable and dense, as it is made by the use of the rolling tamper, the paving material placed on top of it does not need to be any thicker than is necessary to withstand the wear of passing vehicles and animals. In many cases a very slight surface of gravel or broken stone combined with asphalt will form a road capable of standing the usual traffic for a very long time.

"A great saving in this system of ours is the substituting of natural material for the foundation, instead of the use of a

thick layer of stone as a foundation for the wearing surface, which is placed on the top of the macadam foundation. The earth foundation is also superior to the rock foundation because of its elasticity, taking up the shock or impact from the wheels of passing vehicles, thus allowing the surface stone to withstand wear longer because of the slight 'give' there is to the earth foundation, instead of the rigid support given by a stone foundation.

"The company will advocate the construction of simple tamped earth roads in such parts of the country as have only very slight traffic and where funds are insufficient to construct more expensive metallized roads. Where the population is greater it will recommend and urge that this same foundation be protected from wear by the use of from two to four inches of stone and asphalt as a wearing surface, and in towns and cities where greater traffic and larger expense is warranted it will advocate the same foundation with a wearing surface of from six to eight inches of stone and liquid asphalt, finished with a sealing coat of asphalt and stone screenings or fine gravel."

ALBERT PHENIS.

A Model Dirt Road.

Characteristic of a policy adopted by the Illinois Central Railroad throughout its territory from Iowa down to Louisiana to arouse the interest of local people in the great benefits from good road construction, W. J. Comerford, a public road contractor of New Orleans, is now engaged in the construction of a model dirt road at the instance of the Illinois Central Railroad company, which will be one mile in length, 20 feet wide, running from milepost 59 to milepost 60, near Tickfaw, in Tangipahoa parish, Louisiana. The roadway is now nearing completion, and will be a demonstration to the people of that parish of the feasibility and practicability of building roadways of an enduring character out of the material near at hand. The people of the parish are fortunate in having good soil with which to build good roads, it being a composite of loam and sand that enables the road roller to pack it well and keep it from rutting or raveling.

The Illinois Central Railroad in its specifications for the building of this model road has required the contractor to elevate the road two feet above the level of the ground, with a crown of eight inches. This will insure the immediate drainage of the roadway and enable the work of construction to stand without the work of maintenance.

The evident purpose of the Illinois Central Railroad in undertaking this improvement is to demonstrate to the people of Tangipahoa parish and other places similarly located the easy manner, with little expense, with which they can construct roadways that will be serviceable in all kinds of weather, making social and business communication more accessible for the farmers.

Commission men of Richmond, Va., shipped during the past three weeks 3,240,000 eggs to New York, Philadelphia, Chicago and other markets, according to the *News-Leader* of that city.

The February issue of *Tampa Tribune*, the organ of the Board of Trade, shows that between 1905 and 1911 the value of property in Tampa increased from \$12,342,967 to \$25,643,737.

The special car containing exhibits of Tennessee products, which has made a successful trip in Iowa, is now in Illinois for the encouragement of immigration to Tennessee.

RAILROADS

[A complete record of all new railroad building in the South will be found in the Construction Department.]

"ORIENT" IN THE COURTS.

President Stilwell Says Construction Will Continue and Receivership Will Not Be Long.

The Kansas City, Mexico & Orient Railroad, of which Arthur E. Stilwell is president, has been placed in the hands of receivers, the courts having appointed Edward Dickinson of Kansas City, its vice-president; J. O. Davidson, a banker of Wichita, Kans., and M. L. Turner, also a banker, of Oklahoma City, to administer the property for the benefit of creditors. A dispatch from Dallas says that S. B. Hovey of Fort Worth and M. L. Mertz of San Angelo, Tex., have been appointed receivers in Texas. Each receiver gave \$50,000 bond.

President Stilwell, who is in New York, is quoted saying that the receivership is a friendly proceeding, and that none of those who have invested in the enterprise will lose anything; also that arrangements have been perfected for a reorganization, and it is intended to issue 5 per cent. bonds in place of the 4 per cent. bonds now out. Furthermore, he is reported saying that the interest on the \$15,000,000 of bonds was paid last month; hence it was necessary that some of the men who furnished material for construction should file the application for a receivership, which was done. The receivership and reorganization were agreed upon because the 4 per cent. bonds could not be sold at this time, when 5 per cent. railroad bonds are demanded. As to construction, the company has about 900 miles of new line finished, the most difficult portion being done.

A report from Kansas City quotes representatives of the company as saying that the construction will be continued and the road completed, the estimated cost of the work remaining being about \$20,000,000, according to a statement credited to Edward Dickinson. The claims filed against the property, it is stated, are those of the International Construction Co., \$1,300,000; the Union Construction Co., \$146,000, and the Western Tie & Timber Co., \$18,000, besides the bonded debt of \$21,000,000, represented by the United States & Mexican Trust Co., trustee under the mortgage.

The railroad now consists of 510 miles of track from Wichita, Kans., to San Angelo, Tex.; 132 miles from San Angelo to Granada, Tex.; 91 miles from Marques to Chihuahua, Mexico; 74 miles from Minaca to Sanchez, Mexico, and 62 miles from Fuerte to Topolobampo, Mexico, besides 122 miles over the Mexico Northwestern Railway from Chihuahua to Minaca, of which the trains of the "Orient" have use. Topolobampo is on the west coast of Mexico, 1050 miles from Kansas City. Construction began about 10 years ago, and President Stilwell is reported saying that he raised in this country and abroad about \$28,000,000 for the work, about half in the United States and half in England and Europe.

A report from New York says that a protective committee for the stockholders is about to be formed with the Columbia Trust Co. as depositary. A bondholders' committee is also being organized. President Stilwell, according to a statement published in New York, is confident that the money necessary to finish the road will be obtained. The property in Mexico has sustained considerable damage owing to the hostilities there, and the company was obliged to stop new construction by reason of the disorder, although

the Mexican Government compensated it for destruction of bridges. He thinks the receivership will not last long.

Another report from New York quotes Frederick Hurdle of London as saying that the receivership was applied for at the instance of a committee of English bondholders; also that it is proposed to reorganize, but no definite plans have been made.

At Kansas City it is said that the completed sections of the line are not paying their operating expenses, and the company has paid the interest on its bonds with borrowed money, much of which has not been repaid; also that it has a floating debt of \$2,867,000, of which considerable is past due. Furthermore, the employees have not been paid for January and February, and a large amount of taxes remains unpaid. All these statements, it appears, were made in the bill asking for receivers, which, nevertheless, makes it plain that the line as a whole will be very valuable when completed through.

One of the best assets of the property is the Kansas City Outer Belt & Electric Railway, which will be used for entrance to Kansas City.

RAILWAY AND POWER PLAN.

Interurban to Connect Several Texas Cities—Also Electric and Gas Plants.

Charter has been filed at Austin, Tex., for the Guadalupe Water Power Co., which, in addition to building five or six hydro-electric plants on the Guadalupe River, proposes to construct an electric interurban railway about 50 miles long to connect Seguin, New Braunfels and San Antonio, Tex. The line may eventually be extended to Lockhart and Austin, in which case it would be altogether about 100 miles long. Headquarters will be at Seguin, Tex.

The incorporators of the company are W. B. Dunlap of Beaumont, Tex., who is president of the Gulf National Bank there; E. W. Brown, a lumber manufacturer of Orange, Tex., and J. M. Abbott, capitalist, of Seguin, Tex. Mr. Dunlap is also president of the Southern Rice Growers' Association and of the San Jacinto Rice Co. Senator F. C. Weincert of Seguin has also been mentioned in connection with this enterprise, the charter of which was filed by Walter J. Crawford of Beaumont, general attorney.

The company, as may be imagined by the number of dams which it proposes to construct on the river, intends to supply electric current for lighting and power purposes, and it will likewise manufacture gas also for public consumption, but the railway project will require that a separate charter be taken out for it, as the papers just filed are for the power and gas enterprise alone. The capital is \$600,000, in shares of \$100 each. The entire amount is said to be subscribed, and one-half already paid in. Mr. Crawford is quoted saying that the work of building the dams will begin immediately. About \$300,000 have been already spent, it is stated, for lands and riparian rights.

New Equipment, Rails, Etc.

The Western Maryland Railway has ordered 15 consolidation locomotives from the American Locomotive Co., New York, and 10 Pacific type locomotives from the Baldwin Works, Philadelphia; also 18 vestibuled and electrically-lighted passenger cars, 6 all-steel combination mail and express cars and 5 baggage cars from the Barney & Smith Car Co., Dayton, O.

The Chesapeake & Ohio Railway has ordered 6000 tons of rails from the Maryland Steel Co., Sparrows Point, Md.

The Louisiana Railway & Navigation

Co. is reported in the market for 5 locomotives.

The Mt. Airy & Eastern Railway is in the market for a good second-hand or rebuilt locomotive of about 28 tons weight, and also for about 3 miles of 40-pound good relaying steel rails.

The Tennessee Coal, Iron & Railroad Co. is reported in the market for 200 coal cars.

The Savannah & Southern Railroad has purchased a 60-foot combination car from the Central Locomotive and Car Works, Chicago.

The Norfolk & Western Railway has ordered 300 tons of bridge steel from the Virginia Bridge Co., Roanoke, Va.

The Mobile & Ohio Railroad has ordered two Mikado type locomotives from Baldwin.

The Missouri & North Arkansas Railroad, says a market report, has ordered 2 gas electric cars, each 70 feet long, from the General Electric Co., Schenectady, N. Y.

The St. Louis & Jennings Railway, St. Louis, Mo., will, it is reported, purchase 2 more electric cars. David P. Leahy is president.

The Pierce-Fordyce Oil Association, Dallas, Tex., has ordered 100 tank cars from the American Car & Foundry Co., St. Louis.

The Pennsylvania Lines West have ordered about 400 tons of bridge steel from the Chicago Bridge and Iron Works.

The Houston & Texas Central Railroad, it is reported, will build some locomotives at its own shops.

The Rock Island Lines are reported to have ordered 3000 tons of bridge steel from the American Bridge Co., New York.

The Vandalia line of the Pennsylvania system has ordered 23 box cars from the American Car & Foundry Co. and 50 all-steel 50-ton gondola cars from the Cambria (Pa.) Steel Co.

The Grand Junction & Grand River Valley Railway has just awarded contract to the Southern Car Co., High Point, N. C., for 3 combination wood and steel passenger cars.

SOUTHERN LETS CONTRACTS.

Freight Terminals to Be Constructed at Both Raleigh and Goldsboro, N. C.

[Special Cor. Manufacturers Record.]

Raleigh, N. C., March 12.

Following the announcement recently made by President Finley of the Southern Railway Co. that modern freight terminals would be constructed in this city and at Goldsboro, it is now announced that the Southern is soliciting bids for the construction of a brick freight warehouse and office building 300 feet long by 50 feet wide to be erected in Raleigh, and has awarded the contract for the construction of a brick freight warehouse and office building 228 feet long by 50 feet wide at Goldsboro to J. P. Pettyjohn & Co. of Lynchburg, Va.

The improvements to be made at Raleigh, in addition to the building proper, will include the construction of 9100 square feet of new platform, 3700 square yards of macadam driveway, the rearrangement of present tracks and the construction of 1960 linear feet of new tracks. For the new freight terminal at Goldsboro 5500 square feet of new platform, 4800 square yards of macadam driveway and 1385 linear feet of new tracks will be provided, in addition to the building for which contract has been let.

These improvements have been planned not only to provide facilities to satisfactorily handle the business now offered at Raleigh and Goldsboro, but to take care of the great increase of business which is

expected in the next few years. The greatly-increased facilities for shippers and receivers of freight will prove of great value to both cities, and should prove a strong factor in their future progress.

Eastern Texas Traction Co.

Joseph F. Nichols of Greenville, Tex., and others, who have for some time projected a line of electric railway to connect Greenville with Dallas and other points, have now obtained a charter for the Eastern Texas Traction Co., capital \$2,000,000, and contemplate the construction of a system that will ultimately be 193 miles long. The charter was filed by J. W. Crotty of Dallas, vice-president of the company, and a report from that city quotes Major Nichols, the president, as saying that actual construction will soon begin.

The Mansfield Engineering Co. of Indianapolis has made a survey, and among the places on the route are Wolfe City, Garland, Rockwell, Royse and Fate. It is further stated that financial arrangements have been made and contracts closed for the location surveys and the construction. It is estimated that it will cost \$1,850,000 to build the 70 miles from Greenville to Dallas and Wolfe City, and that the entire system will cost \$5,000,000.

The officers of the company, in addition to those named, are W. A. Williams of Greenville, second vice-president; Forest E. White of Galveston, third vice-president; I. A. Miller of Dallas, secretary, and L. E. Birdsong of Greenville, treasurer.

It is intended to conduct an express business in addition to passenger traffic.

New Orleans & Grand Isle.

The New Orleans & Grand Isle Tractation, Light & Power Co. has been chartered at Toronto, Canada, according to announcement in New York, for the purpose of taking over the New Orleans Southern & Grand Isle Railroad and converting it from steam to electric operation; also the Algiers Railway & Light Co., which the New Orleans Southern recently acquired. C. D. Warren, president of the latter, is a resident of Toronto.

It is further stated that the new Canadian company has \$10,000,000 capital stock in shares of \$100. The New Orleans Southern & Grand Isle Railroad is 60 miles long from Algiers, opposite New Orleans, to Buras, La., and the Algiers Railway & Light Co. owns and operates the street railway and lighting plants at Algiers.

According to a late report from New Orleans, it is proposed to connect the two roads and to use electric power to operate them. C. E. A. Carr, the general manager, is from Quebec, Canada. Inquiry made at New Orleans as to the improvement plans elicited the reply that there was nothing to be said at present.

Chattanooga to Cleveland.

The East Tennessee Traction Co., which plans the construction of an interurban railway from Chattanooga to Cleveland, Tenn., about 25 miles, and also to other points, has applied for a charter. The capital stock is to be \$100,000. The incorporators are J. W. Adams, George B. Adams, William L. Frierson, B. C. Roper and Lewis M. Coleman of Chattanooga.

A Line Along the Chattahoochee.

It is proposed to build a railroad from Georgetown, Ga., northward via Columbus to Atlanta, following the valley of the Chattahoochee River, and application for a charter has been made in Muscogee county, the line to be called the Columbus, Chattahoochee & Gulf Railway, with principal offices at Columbus, the county-seat.

The line will be about 130 miles long; capital will be \$500,000, in \$100 shares. The organizers are reported saying that there will not be any difficulty in obtaining funds for construction. The petitioners are Josiah Flournoy, J. Johnson Williams, L. H. Chappell, Arthur Bussey, P. J. Williams, L. F. Humber, Henry R. Goethius, T. T. Miller and E. P. Owlesley of Muscogee county, and John D. Little of Fulton county, of which Atlanta is the county-seat.

Piedmont & Northern Progress.

A report from Charlotte, N. C., says that the Piedmont & Northern Railway has operated its first car between Charlotte and Mt. Holly, seven miles, a trip thereon being made by several officers of the company. It will be a week before a regular schedule is put in operation to Mt. Holly, and several weeks must pass before the line is completed to Gastonia. Construction is proceeding as fast as the weather will permit. Reports from Greenville, S. C., also say that the work there is going ahead as rapidly as might be anticipated under adverse weather conditions, the contractors pushing their forces all the time to complete the job as soon as expected.

C. & O. SELLS NOTES.

Proceeds of \$3,500,000 for New Equipment and General Improvements.

A report from New York says that the Chesapeake & Ohio Railway has sold \$3,500,000 of 4½ per cent. gold notes, due June 1, 1914, to Kuhn, Loeb & Co. and the National City Bank, and that \$1,750,000 of the proceeds will be spent for 2000 coal cars and 50 locomotives recently ordered, while the rest will be devoted to general improvements.

Railroad Notes.

The Atlantic Coast Line is rapidly completing a spur track 3800 feet long to the Old Faber Place, a picnic and pleasure resort on the Ashley River near Charleston, S. C., and A. C. Kaufman, owner of the grounds, says that it will be completed within three weeks.

A report from St. Louis says that the Chicago & Eastern Illinois Railroad, one of the Frisco system's lines, has purchased 35,000 acres of coal lands near Hillsboro, Ill., for the purpose of guaranteeing it an ample supply of fuel for its locomotives. It is further said that the St. Paul road will soon buy lands in the same locality.

Texas Oysters.

In the waters of Galveston county, Tex., 3361 acres have been planted in oysters under private auspices, and in the waters of five counties along the Texas coast are more than 5000 acres thus planted. "Within recent years," according to the Galveston *News*, "the oyster gatherers have learned that the natural oyster beds in Galveston and adjoining bays are not sufficient to supply the demand, and as a result many acres of bay bottoms have been planted to oysters with a view to increasing the supply. This planting has been done by private citizens, who have taken these bottoms under the liberal lease system of the State of Texas, planted them, paid the yearly tax required and are now gathering their oysters and reaping some of the profits to be made from privately planted and tended oyster beds."

Richard S. Kirchberger of Highland Park, Ill., has, according to the New Orleans *Picayune*, ordered a carload of Louisiana topsoil to be used in growing flowers. The topsoil has been valued at \$6 per ton as commercial fertilizer.

TEXTILES

[A complete record of new textile enterprises in the South will be found in the Construction Department.]

Correspondence relating to textile matters, especially to the cotton-mill interests of the South, and items of news about new mills or enlargements, special contracts for goods, market conditions, etc., are invited by the MANUFACTURERS RECORD. We shall be glad to have such matters at all times, and also to have any general discussion relating to cotton matters.

The Cotton Movement.

In his report for March 8 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 190 days of the present season was 13,267,058 bales, an increase over the same period last year of 2,602,829 bales. The exports were 8,259,190 bales, an increase of 1,920,293 bales. The takings were, by Northern spinners, 1,740,105 bales, a decrease of 9002 bales; by Southern spinners, 1,761,478 bales, an increase of 190,697 bales.

Enlarging Lagrange Mills.

The Lagrange (Ga.) Mills, controlled by the International Cotton Mills Corporation of New York, will add 5000 spindles, 63 cards, 6 lappers, etc. Contracts have been awarded for this machinery and an 88x90-foot building erected. Lockwood, Greene & Co. of Boston are the engineers in charge. The present mill has 10,000 ring spindles, 100 looms, etc.

Improvements Costing \$30,000.

The Granite Falls (N. C.) Manufacturing Co. will erect an additional story on its 75x227-foot building, as lately stated. Its new machinery will include 1000 spindles, 10 cards, etc. All contracts have been awarded and the improvements will cost \$30,000.

Linen and Silk Manufacturers.

W. T. Kennedy, Boulder, Colo., wants addresses of linen and silk manufacturers in the United States, preferably near Mississippi, so as to have the benefit of reduced rates west.

A \$150,000 Increase.

The Barringer Manufacturing Co., Rockwell, N. C., has increased its capital stock from \$150,000 to \$300,000. This company has 3000 ring spindles driven by steam power.

Textile Notes.

The Bell Hosiery Mills, Suffolk, Va., has increased capital stock from \$25,000 to \$50,000.

The Brandon Mills, Greenville, S. C., is reported to have awarded contract for 10 additional new spinning frames.

A. L. Morgan and Q. S. Sevier of Camden, Ark., are planning the organization of a company to build a cotton mill.

The Berryton (Ga.) Mills has added 3000 spindles in order to meet the increasing demand for the company's yarns.

It is reported that William H. Ragsdale of Jamestown, N. C., is planning the erection of a 5000-spindle cotton-yarn mill at High Point, N. C.

The Magnolia Mills of Charlotte will, it is reported, erect a building and install 12,000 spindles, together with 6144 ring spindles in present building.

The Rome (Ga.) Hosiery Mills has added to its plant and increased daily output by 400 dozen pairs, thus providing a daily capacity of 1800 dozen pairs.

It is reported that the Cowkee Mills of

Eufaula, Ala., will erect a building and install 8000 spindles. This company now has 12,352 ring spindles, 320 looms, etc.

The Franklin Cotton Mill, Concord, N. C., is reported as to install 5000 spindles in its three-story 100x200-foot additional building recently noted as contracted for.

The Mallison Braided Cord Co., Athens, Ga., will install new machinery to replace old equipment, and has awarded contracts. It operates 2000 ring spindles, 11 broad looms, 150 braiders, etc.

Report states that the Cannon Manufacturing Co. of Concord will build a mill of 30,000 spindles and probably a bleachery at Kannapolis, the product to be fine bleached sheeting.

The Arista Mills Co., Winston-Salem, N. C., has increased its capital stock from \$350,000 to \$500,000. This company writes to the MANUFACTURERS RECORD: "As to any changes in plant, our plans have not yet been formulated."

W. H. Shuford, Hickory, N. C., and associates are, it is rumored, planning organization of a \$1,000,000 company to build a cotton mill. Mr. Shuford wires MANUFACTURERS RECORD: "Nothing definite for publication; only contemplating."

The Wiscasset Mills Co., Albemarle, N. C., will erect a building and install machinery for spinning its card strips and comber waste into coarse yarns. This company is now operating 70,000 ring spindles. Its new building is to be equipped with 5000 spindles.

The Durham (N. C.) Hosiery Mills is planning to build a three-story brick building at its High Point plant, as stated last week, but advises that the size has not been determined. This company has begun the erection of another building at its Goldsboro (N. C.) plant, this structure to be two stories high, 50x100 feet.

LUMBER

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

Cooperage Plant Costing \$26,000.

The Greenville (N. C.) Cooperage & Lumber Co. will erect 72x34-foot main building, with 24x34-foot wing, 24x45-foot steam kiln and two 40x35-foot drykilns. This construction will cost \$16,000, and machinery costing \$10,000 will be installed for a daily capacity of 6000 headings and 45,000 staves for barrels. The company was incorporated recently with \$100,000 capital stock, and H. B. Miner is president.

Now Building Arkansas Plant.

The Grayling Lumber Co. of Detroit is now building its plant at Arkansas City, Ark., the capacity to be 100,000 feet of lumber every 10 hours. Its buildings include 64x100 and 18x72 feet structures and others, of fireproof and ordinary construction, costing \$100,000. Its machinery is being furnished by the Filer & Stowell Company of Milwaukee.

Wanted for Belgium Buyers.

Herman Dullere, Saventhem, Belgium, writes to the MANUFACTURERS RECORD:

"I am trying to get agencies for the sale, on commission, in Belgium, at retail or wholesale, of utensils and equipments for the kitchen and household, gardening and farming tools and equipments, iron, steel, leather, etc., for saddlers and harness-makers. I want also lamps for vehicles and for reading purposes, chains, belts, currycombs, tools for making locks, files, rasps, hardware of all kinds for buildings and for furniture."

FOREIGN NEEDS

Machinery and equipment wanted abroad are mentioned in many letters received by the MANUFACTURERS RECORD, which is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. For the benefit of our subscribers seeking foreign trade we publish the following extracts from recent letters:

Mining and Milling Machinery.

Bonwick, Hignett & Co., Bull's Chambers, 14 Moore street, Sydney, N. S. W., Australia, write to the MANUFACTURERS RECORD:

"We are a young firm recently established, and we have opened branch offices in Brisbane and Melbourne. Our Mr. Bonwick is a mining engineer of good standing in Australia. We are anxious to include amongst these agencies the representation of a first-class firm making milling and mining machinery in all branches. It should, however, be understood that mining in Australia cannot be said to be in a flourishing condition. However, periodically there is a demand for a new plant or alterations to an old one are contemplated, and we should like to be in a position to quote. In communicating with us it is essential for a firm to send prices and discounts, together with weights and closest possible information as to rate of freight from their center to Sydney. You are, of course, aware of the 5 per cent. preference to British goods."

Wants Navy Supplies.

Ettore Diana, via Manzoni 3 p 20, Spezia, Italy, writes to the MANUFACTURERS RECORD:

"I would like very much to establish commercial relations with American manufacturers of guns, swords, projectiles, etc., instruments of precision and technical appliances and equipments for navies. I wish also to arrange for the importation into Italy of 'manila.' I would be very grateful to you if you would insert in your review something in regard to the above, and I assure you that I am in position to do a very good business with the Italian naval authorities in the goods above mentioned."

Electric Heating for Cars.

L. Jeusette, 71 Quai Coronmeuse, Liege, Belgium, writes to the MANUFACTURERS RECORD:

"I am now in search of a system of electric heating for warming street railway cars in winter, a system not too complicated, practical and above all not too costly. We want to get a temperature of 12 degrees at least (12 degrees centigrade equal to 54 Fahrenheit, 12 Reaumur equal to about 60). If you can put me in communication with some American firm able to meet my wants I am in a position to make a very important deal with that firm for business rights in Belgium."

For American Wood Exporters.

Florentino C. Pogliano, San Pedrito 76-Flores, Buenos Aires, Argentina, writes to the MANUFACTURERS RECORD:

"Desiring to correspond with an American wood exporter with a view to represent him in this city, I take the liberty to trouble your attention for a moment, sure that you will be kind enough to do all that you can in my behalf."

Wants Mill Machinery.

Juan San German, engineer, Socorro, Colombia, writes to the MANUFACTURERS RECORD:

"I should like to get in communication

with and receive catalogues and price-lists from manufacturers of machines and equipments for preparing coffee, sugar, rice, coco and corn (hominy mills), etc., and machinery for working up vegetable fiber. If it is not too much trouble to you I hope you will get people in the above lines to send me their price-lists, with discounts, etc. We would then be able to get into commercial contact with them."

Wants Patent Articles.

Compagnie Industrielle Bluvine, 32 rue Baudin, Paris, France, writes to the MANUFACTURERS RECORD:

"Let us know if you know some good new patent articles for which we could take up the sole agency for France."

MINING

Radium in Arkansas.

Referring to reports that radium has been discovered in the Ozark Mountains of Arkansas, J. F. McClelland of Rogers, Ark., wires the MANUFACTURERS RECORD in part as follows:

"Tests made of ore taken from under mountain show that the pitch blend thorium and uranium being mined contains a high percentage of radio activity. The discovery has been made by Logan Leib, a geologist, who has put the ore to the tests prescribed by Madame Curie, and who has had experts here making the examinations. The crude ore was given the photographic tests."

Alabama Cream White Marble.

Referring to plans for marble developments in Talladega county, Alabama, Wm. T. Coniff of Birmingham wires the MANUFACTURERS RECORD as follows:

"Moretti-Harrah Marble Co.; capital stock \$100,000; Giuseppe Moretti, Florence, Italy, president; Charles T. Harrah, Havana, Cuba, vice-president; Leonard E. Browison, Havana, Cuba, secretary and treasurer; extensive quarry operation; cream-white marble."

Mr. Harrah was mentioned in January as contemplating Talladega county marble developments.

Kentucky Asphalt and Fire-Clay.

Referring to plans for Kentucky developments, S. M. Bradley of Morehead, Ky., writes to the MANUFACTURERS RECORD as follows:

"We have not started operations in regard to developing asphalt rock in Carter county, but we have recently acquired more of this territory and have some very fine deposits of asphalt and fire-clay. We are contemplating organizing a large company to work these mines. We have enough fire-clay and asphalt now to run a number of plants for years. As it has all been worked and tested, there is no question as to the quality."

To Develop Virginia Manganese.

The Piedmont Manganese Corporation has been chartered by R. R. Livingstone and Charles T. Henning of New York, M. R. Ireland of London and others to develop manganese property near Lynchburg, Va. It is reported the company has purchased 315 acres of land for nearly \$500,000, taken options on 1500 acres adjoining, and will build \$250,000 plant for mining, grinding, etc.

A \$500,000 Company.

The McAlester (Okla.) Coal Fields Co. has been incorporated with \$500,000 capital stock by W. F. Beaty, Tom Hale and C. W. Dawley.

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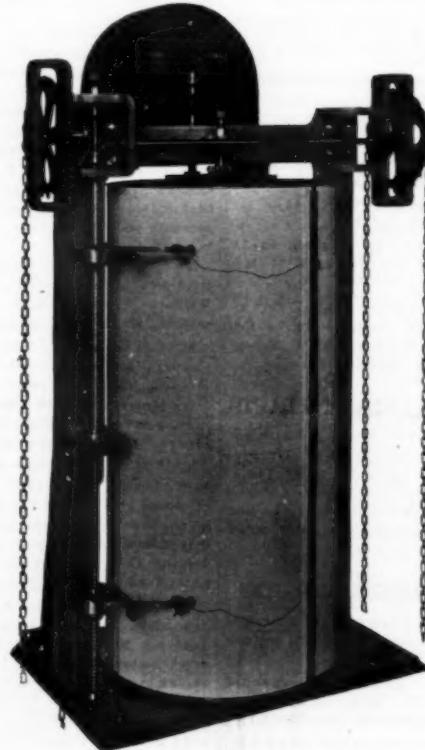
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MECHANICAL

The Hydro-Chronograph.

An instrument which gives a complete graphic record of the varying heads of streams, reservoirs and other bodies of water is manufactured by the Hydro Manufacturing Co., Bullitt Building, Philadelphia, and is called the Hydro-Chronograph. The instrument is operated by a glass float attached to a brass link chain which passes over the sprocket wheel on the frame, as shown in the accompanying illustration. The other end of this chain is connected to an iron counterweight balancing the weight of the float when partially immersed in water. As the float rises or falls with the water this sprocket wheel revolves, thus raising or lowering the recording pencil by means of small beveled gears acting on a vertical worm gear and nut. The drum is revolved by clockwork, so that the pencil traces the curve on the chart, each point of which corresponds to the time as shown on the scale. The instrument is easily installed,



THE HYDRO-CHRONOGRAPH.

and the one shown in the illustration operates automatically seven days without changing the chart. This is the type "B," and is designed to give simultaneous records of two water levels, such as "head water" and the water in the tailrace at a power dam. Each sprocket has an independent float, and the instrument has a maximum range of 10 feet of water for each level. The type "A" instrument has only one pencil, and records the variation in the water level for a period of 31 days without changing the chart. Instruments are made with the maximum variation of water head of 10, 15, 20 and 30 feet.

Another form is designed to keep an automatic record of the percentage of opening of turbine gates. The chains are attached to the gate and run over idler wheels to the instrument, being counterweighted at the other end.

These Hydro-Chronographs are valuable for use wherever it is desired to secure a record showing the water head at all times, as in reservoirs, power streams, etc. It is useful for river and harbor improvement work, and in conjunction with sounding apparatus in varying tides.

Recent installations include 12 for the

United States Geological Survey; 4 for the United States Reclamation Service; 3 for the Stone & Webster Engineering Corporation, Boston; 3 for the Aluminum Company of America at Chilhowee, Tenn.; some for the city of Richmond, Va.; the Appalachian Power Co., Grayson, Va.; Central Georgia Power Co., Jackson, Ga.; 14 for the Wisconsin Valley Improvement Co., Wausau, Wis., and many others.

High-Speed Material-Handling Trolleys at the Texas City Terminals.

In order to rapidly and economically handle great quantities of materials, such as cotton, pig-iron, steel rails, coal, etc., in connection with the extensive warehouse system of the Texas City Transportation Co. at Texas City, the high-speed trolleys shown in the accompanying illustration were installed as designed and built by the Pawling & Harnischfeger Company, Milwaukee, Wis. One of the illustrations shows a steamer with coal barges alongside and another shows the coal at the storage depot which has been discharged from steamers for the Davis Coal & Coke Co. of Baltimore, which operates largely

ism include the arrangement of parts for taking the hook off of the hoisting rope and slipping the rope into a single rope grab bucket of the latch open type. Rope guards on the bucket are arranged in such a way that they can readily be opened,

concentrate all the motor capacity of the hoist motor on the one drum, which is used for the hook or single line hoist service as well. When the bucket is not in use the holding line is disconnected from the bucket and wound up on its drum,



PAWLING & HARNISCHFAGER HIGH-SPEED MATERIAL-HANDLING TROLLEYS.

and the hoisting rope, which also performs the functions of the closing line of the bucket, may be readily inserted. A novel and important feature in the application of a single line bucket of this type is its use with a set of two lines, consisting of the hoisting or closing line and the holding or tripping line. The holding line is which then remains at rest, while the single hoist drum and ordinary bucket are being used. The holding drum motor performs about the same function as the spring in a curtain roller; that is to say, it tends to run ahead of the hoist motor when going up and to lag behind the latter when going down. In this way the holding line

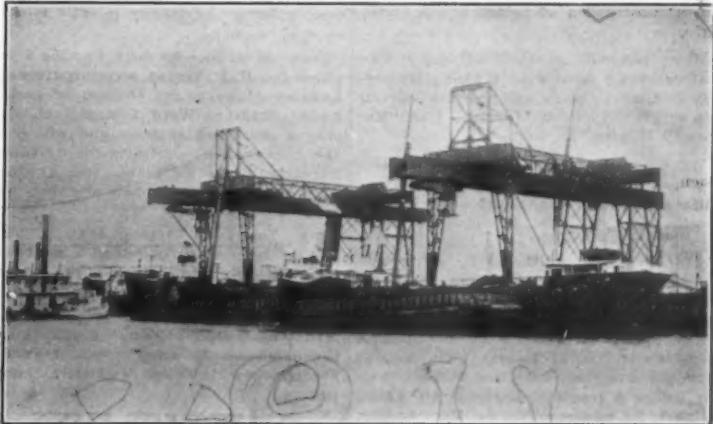


DAVIS COAL & CO.'S COAL STORAGE, TEXAS CITY.

wound upon a drum operated by a motor just strong enough to keep the slack out of the rope either going up or down. In this way it is possible to discharge the bucket at any desired height by means of a large foot-operated band brake on the holding drum. When the bucket is fully

is never slack, and it is therefore impossible to jerk the line when the bucket is discharged.

In connection with the hook service a lifting magnet of two and one-half tons capacity is used. The feed cables for this magnet are wound up and paid out by a



DAVIS COAL & CO.'S BARGES ALONGSIDE STEAMER.

open, and therefore latched, the foot brake is released and the weight of empty bucket is again placed on the closing line, when it can be lowered without closing until it strikes the stock pile. The design was worked out in this manner in order to

small motor-operated winding drum. The performance of this cable take-up is exactly the same as the holding drum mechanism; that is to say, the cable is always under slight tension going either up or down.

Construction Department

TO OUR READERS!

In order to follow up properly the Construction Department items, please bear in mind the following statements:

EXPLANATORY

The MANUFACTURERS RECORD seeks to verify the items reported in its Construction Department by full investigation. It is often impossible to do this before the item must be printed or else lose its value as news, and in some items it is found advisable to make statements as "it is reported" or "rumored," and not as positive information. If our readers will note these points they will see the necessity of the discrimination. We are always glad to have our attention called to errors that may occur.

HOW TO ADDRESS

The name of one or more incorporators of a newly incorporated enterprise should always be shown on letter addressed to the official headquarters or to the town of the parties sought, as may be shown in the item. Sometimes a communication merely addressed in the corporate or official name of a newly established company or enterprise cannot be delivered by the postmaster. By following these general directions the postoffice will be enabled to deliver your mail promptly, although it is inevitable that some failure by the postal authorities to deliver mail to new concerns will occur.

WRITE PERSONAL LETTERS

In communicating with individuals and firms reported in these columns a letter written specifically about the matter reported will receive better and quicker attention than a circular. In most instances a return postal card or addressed and stamped envelope should be enclosed with letter.

In correspondence relating to information published in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

The Daily Bulletin of the Manufacturers Record is published every business day in order to give the earliest possible news about new industrial, commercial, building, railroad and financial enterprises organized in the South and Southwest. It is invaluable to manufacturers, contractors, engineers and all others who want to get in touch at the earliest moment with new undertakings, or the enlargement of established enterprises. The subscription price is \$25 per year. On all advertising contracts in the Manufacturers Record for three months or longer a subscription to the Daily Bulletin is included for the contract period.

BRIDGES, CULVERTS, VIADUCTS

La., Mooringsport.—Caddo Parish Police Jury, W. T. Crawford, president, contemplates construction of bridge across Caddo Lake.

Miss., Batesville.—Board of Supervisors will construct three steel bridges; bids received April 1; plans and specifications on file with Clerk, R. W. Draper. (See "Machinery Wanted.")

Mo., Carthage.—Jasper County Commissioners awarded contracts for three bridges: Missouri Valley Bridge & Iron Co., Leavenworth, Kans., at \$6390, to construct bridge across Turkey Creek at Johnson's Ford, north of Joplin; to Blodgett Construction Co. of Kansas City, Mo., at \$6091, for structural work, and to W. W. Williams, Joplin, Mo., at \$2506, for cement work on bridge across Spring River at Purcell; to Blodgett Construction Co. of Kansas City, Mo., at \$1745, for structural work, and Missouri Valley Bridge & Iron Co., Leavenworth, Kans., at \$2544, for masonry work on Muss Springs bridge, seven miles from Carthage; William Kohlman, County Engineer. (Recently mentioned.)

Mo., Kansas City.—Board of Public Works awarded contract to H. P. Thompson of Kansas City at \$11,500 to construct bridge over Brush Creek at Main St.; reinforced concrete; three arches on concrete piers; width, 40 feet; length, 136 feet; roadway, 26 feet wide, with 7-foot sidewalk on each side; Waddell & Harrington, consulting en-

gineers, Kansas City. (Call for bids lately noted.)

N. C., Hendersonville.—Henderson county will construct two steel bridges across French Broad River; one structure, to replace McElain's bridge, will be 180 feet long; other will be shorter and replace Fanning's bridge.

Okla., Muskogee.—People's Electric Railway will construct bridge across Arkansas River.

Tex., Alpine.—Brewster County Commissioners awarded contract to El Paso Bridge & Iron Co., El Paso, Tex., at \$350 to construct iron bridge across creek on 5th St.

Tex., Del Rio.—National Railways of Mexico, H. Clay Pierce, chairman, 25 Broad St., New York, and Kansas City, Mexico & Orient Railway, W. W. Colpitts, chief engineer, Kansas City, Mo., are reported as surveying site for proposed railway bridge spanning Rio Grande, to connect Del Rio and Los Vacas, Mexico. Mr. Colpitts wires Manufacturers Record: "We do not propose building Rio Grande bridge until some time in future."

Tex., San Angelo.—Tom Green county contemplates voting on \$70,000 bond issue for construction of four viaducts across Concho River and one causeway. Address County Commissioners.

Va., Cape Charles.—George F. Parramore, president, Townfields Bridge Co. (recently noted incorporated with \$5000 capital stock) will construct 685-foot bridge; hardwood piling and oak covering; cost \$5000; George F. Parramore, Jr., engineer in charge. (See "Machinery Wanted.")

CANNING AND PACKING PLANTS

Ala., Grand Bay.—Grand Bay Canning Co. will erect cannery; Robert J. Wells, treasurer, will receive bids for erection of building until 10 A. M. March 22; plans and specifications on file with Grand Bay Canning Co.; certified check, 15 per cent. of bid.

Ark., Pine Bluff.—Arkansas Packing Co. incorporated with \$250,000 capital stock to establish packing and refrigerator plant; daily capacity, 100 cattle, 250 hogs and 100 sheep; Simon Whitestone, president; A. V. Dunn, vice-president; J. N. Booth, secretary-treasurer. (Recently mentioned.)

Fla., Miami.—E. E. Woodson contemplates building cannery.

Ky., Fullerton.—Fullerton Canning Co. (J. B. Brickey interested) will establish cannery and ice plant either in Fullerton or South Portsmouth, Ky.

Ky., Paris.—Baldwin Packing Co. incorporated with \$40,000 capital stock by F. L. Lapsley, George Wyatt, J. D. Booth and T. J. Judy.

Md., Betterton.—Wacker-Davis Company, Marine Bank Bldg., Baltimore, Md., preparing tentative plans for cannery; electrical dynamos to operate machinery; George E. A. Fairley, 511 Equitable Bldg., Baltimore, has contract for electrical work.

Miss., Hattiesburg.—W. M. Conner and E. McInnis will incorporate company with \$50,000 capital stock to establish cannery; erect building. (Company recently reported to build cannery.)

Tenn., Memphis.—Southern Packing & Provision Co., H. E. Vernon, secretary-treasurer, awarded contracts for erection of packing plant; Bradshaw-Ward Company of Memphis is consulting engineer and will supervise construction; contracts for machinery, including 40-ton ice plant, also awarded; daily capacity of 100 animals provided. (Recently mentioned.)

Tex., Texarkana.—Armour & Co., Chicago, Ill., are reported as to establish meat-packing plant, requiring erection of pressed-brick building to cost \$50,000; J. J. Deady, Shreveport, La., division superintendent.

Va., Winchester.—Newton J. Funkhouser has purchased 100 acres of land near Fort Frederick for \$4000 and will erect cannery factory.

CLAYWORKING PLANTS

Ala., North Birmingham, Station Birmingham—Sewer Pipe.—Southern Sewer Pipe Co. will improve and remodel plant, install new clayworking machinery, etc.; contract awarded for 400-horse-power Corliss engine.

Fla., Tampa—Bricks.—Isadore Kaunitz is promoting establishment of brick plant.

La., Milledgeville—Bricks.—J. M. McMillan will organize company with \$85,000 capital stock and enlarge brick works; improve-

ments to include continuous kiln 370 feet long and chimney stack 135 feet high.

S. C., Pageland—Bricks.—Pageland Brick Co. will erect brick plant; ordinary construction; no bids; C. L. Goodson, president; P. H. Arant, vice-president; J. C. Blackwell, secretary-treasurer. (Recently noted incorporated with \$3000 capital stock.)

Tex., Alice—Concrete Blocks, etc.—Ideal Concrete Stone Co., A. E. Hinrichsen, manager, Boelus, Neb. (after April 1, Alice, Tex.), will erect plant to manufacture brick and concrete blocks. (See "Concrete and Cement Plants.")

COAL MINES AND COKE OVENS

Ala., Birmingham.—Maryland Coal Co., 1 Broadway, New York, writes it is developing no coal in Winston county; recent unconfirmed report said company will develop.

Ala., Montgomery.—Cumberland Coal Co. incorporated with \$10,000 capital stock; Chas. H. Scott, president; S. W. Catts, vice-president and treasurer; W. J. Martin, secretary.

Ark., Fort Smith.—Massard Coal Co. incorporated with \$50,000 capital stock; John T. Hunt, president; E. Bohanon, vice-president; C. E. Safored, secretary-treasurer.

Ky., Lily.—Old Lily Coal Co. incorporated with \$4000 capital stock by B. M. Parks, C. B. Gilbert and S. W. Gregory.

Mo., Joplin.—Western Arkansas Coal Co. incorporated with \$10,000 capital stock by James Fitzgibbon, W. E. West, Richard Cox, L. W. Winter and M. R. Lively.

Okla., McAlester.—McAlester Coal Fields Co., capital stock \$5000, incorporated by W. F. Beatty, Tom Hale and C. W. Dawley.

Tenn., Highland.—Highcliff Coal Co. incorporated with \$50,000 capital stock by D. C. Campbell, Howard McCormick, T. G. McVonnell and others.

W. Va., Grafton.—Sunnyside Coal Co. incorporated with \$25,000 capital stock by Edward Wallace, Hugh Warder, Jed W. Robison, George King and Thomas Dailey.

CONCRETE AND CEMENT PLANTS

Tex., Alice—Concrete Stone—Ideal Concrete Stone Co., A. E. Hinrichsen, manager, Boelus, Neb. (after April 1, Alice, Tex.), will erect 40x80-foot plant; has machinery; daily capacity 300 8x8x16 concrete blocks and 2000 bricks. (Mr. Hinrichsen recently noted to establish plant.)

COTTON COMPRESSES AND GINS

Ala., Haleyville.—Haleyville Commercial Club is promoting establishment of cotton compress.

Ark., Blytheville.—Joseph Newburger of Newburger Cotton Co., Memphis, Tenn., is negotiating with Blytheville Business Men's Club relative to building cotton compress; estimated cost, \$50,000.

Ark., Pine Bluff.—Company will be incorporated with \$60,000 capital stock by P. P. Byrd, Frank Worrall, E. A. Aronson & Co., F. B. Tomlinson and others; establish cotton compresses and storage capacity for 40,000 bales cotton.

La., Arlington.—Arlington Compress Co. incorporated with \$17,500 capital stock by J. M. Bell of Dawson, Ga.; C. J. O. Farrell, Cuthbert, Ga., and F. G. Jackson, Arlington; awarded contract to W. T. Jay & Co. to erect plant; machinery purchased.

Ga., Smyrna.—Smyrna Cotton Oil & Gin Co. incorporated with \$50,000 capital stock by M. V. Ruff and others. (Recently erroneously under Ga., Atlanta.)

Okla., Boley.—Berry-Young Gin Co. incorporated with \$5000 capital stock by C. P. Young, Wilson Brazier and Mrs. Florence Perry.

Okla., Howe.—Mansfield Cotton Oil Co., Mansfield, Tex., will build cotton compress and cottonseed-oil mill.

COTTONSEED-OIL MILLS

La., Boaz.—Smyrna Cotton Oil & Gin Co. incorporated with \$50,000 capital stock by M. V. Ruff and others. (Recently erroneously under Ga., Atlanta.)

Miss., Magnolia.—Magnolia Cotton Oil Co. incorporated with \$35,000 capital stock by T. O. Lampton, J. H. Price, V. L. Terrel and others.

Okla., Howe.—Mansfield Cotton Oil Co., Mansfield, Tex., will build cottonseed-oil mill and cotton gin.

DRAINAGE AND IRRIGATION

Ark., Newport.—B. F. Simmons, E. V. Marlan, J. F. Gardner, Alcorn Ferguson and others petitioned Jackson County Circuit Court for formation of drainage district to embrace Over Cup Slough Basin in Jackson and Woodruff counties; proposed canal to be 15 miles long, beginning at Auvergne; about 2000 acres to be drained.

Ark., Osceola.—Mississippi County Commissioners awarded contract to Canal Construction Co. of Chicago, Ill., to construct drainage canal No. 13; work includes 1,536,800 cubic yards excavation, 8 wooden bridges, etc.; drain 25,800 acres; length of canal, 38 miles; engineer in charge, William E. Ayres, Memphis, Tenn. (Recently mentioned.)

La., New Orleans.—Suburban Realty Co. will soon invite bids for proposed drainage of 7000 acres of land in St. Charles Parish; \$200,000 bond issue available.

Miss., Indianola.—Drainage Commissioners of Indianola Drainage District will issue \$72,000 of bonds for drainage work; D. M. Quinn, attorney for Drainage Commissioners.

Miss., Moorhead.—Moorhead Drainage District organized; embraces 20,000 acres. Address Judge J. T. Thomas, chancellor, Indianola, Miss.

N. C., Lumberton.—Back Swamp & Jacob Swamp Drainage District, F. F. Wetmore, engineer, established to drain district 21 miles long and comprising 33,000 acres of land; one-third under cultivation; construction of canals will soon begin; estimated cost of improvements, \$142,621; Daniel McNeil, G. E. Sellers and A. W. Pate, commissioners; Thomas L. Johnson, attorney, Lumberton, may be addressed. (Robson county recently noted to issue \$130,000 worth of bonds.)

Miss., Sunflower.—Sunflower Drainage District awarded contract to R. H. & G. A. McWilliams, Chicago, Ill., to construct drainage system; \$68,000 bond issue.

N. C., Goldsboro.—Commissioners Wayne County Drainage District No. 1, John R. Wooten, chairman, receive bids until April 3 for construction of drainage system comprising canals 14½ miles long; yardage to be excavated, 290,000. (See "Machinery Wanted.")

N. C., Raleigh.—Royal C. Renick, 217 Seymour Ave., Detroit, Mich., writes regarding proposed Duplin and Pender county drainage proposition and states plans have not been determined; will consult with Morgan Engineering Co., Goodwyn Institute Bldg., Memphis, Tenn. (Recently mentioned.)

N. C., Swanquarter.—Commissioners Matamuskeet Drainage District No. 1 awarded contract to Charlotte (N. C.) company to erect pumping station in connection with reclamation of 54,000 acres, comprising Matamuskeet Lake for Southern Land & Reclamation Co., which proposes to divide property into truck farms of 10 acres or more; station will be designed to pump 1,000,000 gallons per minute; equipment will include eight 60-inch pumps, engines, boilers and superheaters; cost about \$250,000; contract for dredging canals, aggregating 83 miles, was previously reported awarded to Central Dredging Co. of Cleveland, O., and Schuylerville, N. Y. (Previously mentioned.)

Tex., Corpus Christi.—W. A. Fitch (recently noted to have secured option on 3000 acres of land) is having plans prepared and will be ready in about 90 days to construct reservoir of 7,000,000,000 gallons capacity for irrigating 10,000 acres of land, etc. (See "Water-works.")

Tex., La. Pryor.—La. Pryor Irrigation Co. incorporated with \$100,000 capital stock by A. R. Holzschuh, F. R. Young, G. Grant White, all of San Antonio, Tex., and others; will construct irrigation system; secured option on 7000 acres near La. Pryor.

ELECTRIC PLANTS

Ala., Boaz.—City awarded contract to J. B. McCrary Company, Atlanta, Ga., to construct electric plant at cost of \$6350; W. H. Bartlett, Mayor. (Recently noted.)

Fla., Daytona Beach.—Schantz Electric, Ice & Water Co. secured franchise to construct electric-light plant. (See "Water-works, Fla., Seabreeze.")

Fla., Seabreeze.—Schantz Electric, Ice & Water Co. secured franchise to construct electric-light plant. (See "Water-works.")

Ga., Newton.—City has retained Dyard Construction Co., Austell Bldg., Atlanta, Ga., to superintend construction of lighting system; cost \$10,000.

Ga., Savannah.—Savannah Electric Co. will build plant as lately reported; Stone & Webster Engineering Corporation (main offices at 147 Milk St., Boston, Mass.) wires from Savannah to Manufacturers Record as follows: "Structural steel building; brick walls; installation of 11,000 kilowatts capacity; over 6000 above present capacity; 500-kilowatt horizontal turbo-generators and one 1111-turbo-generator; work to be commenced at once after choosing tidewater site from several options; constructing engineers now on ground." Further report refers to plant details as follows: Site 600x300 feet; fireproof construction; ultimate capacity 40,000 kilowatts; storage facilities 20,000 tons coal; latter and ashes handled mechanically; \$60,000 worth concrete work, requiring 9000 barrels cement, 6000 yards stone and 4500 yards sand; 10,000 yards excavation; 1,000,000 bricks; 550 tons structural steel; 200-foot steel self-supporting stack; power-house of red brick, with red enameled interior; twin intake tunnel 250x7 feet; plans, specifications, etc., completed; J. F. Love, construction engineer in charge at Savannah; H. W. Day, designing engineer; both from Stone & Webster Boston offices.

Ga., Swainsboro.—City voted \$7000 bond issue for purchase of local electric-light plant. Address The Mayor.

Ky., Crab Orchard.—Edmund H. Anderson, Nicholasville, Ky., will install electric and ice cold-storage plants at Crab Orchard Springs; former have 1200 light capacity and latter 4 tons; later will install steam plant for heating buildings; cost about \$10,000.

Ky., Paris.—City contemplates building electric light and power plant. Address The Mayor.

Ky., Fulton.—Fulton Electric Light & Power Co. incorporated with \$10,000 capital stock by John Howell Hooks, E. B. Wade and others.

La., Ville Platte.—L. J. Dossman, Opelousas, La., has municipal franchise for electric-light and ice plants.

Miss., Tybertown.—J. C. Flippin and C. H. Stephens have municipal franchise to construct electric-light system.

Mo., St. Louis.—Dorris Motor Co. will erect one-story power-house at 4120-4122 Laclede St.; cost \$7200.

N. C., Salisbury.—North Carolina Public Service Co. has plans for improvement of gas, light and power plants.

N. C., La Grange.—City defeated \$30,000 bond issue for electric-light plant, etc., recently noted; A. Sutton, Mayor. (See "Water-works.")

Okla., Elk City.—Elk City Light & Power Co. incorporated with \$30,000 capital stock by Walter Goodhue of Elk City, J. M. Bonham and D. M. Brennan of Hobart, Okla.

Okla., Stigler.—City will vote April 2 on issuance of \$25,000 bonds to purchase light plant. Address The Mayor.

Okla., Wilburton.—Deganan-McConnell Light & Power Co. incorporated with \$12,000 capital stock by James McConnell, Mary A. McConnell and Mary A. Deganan.

S. C., Florence.—City contemplates voting on \$35,000 bond issue for construction of electric-light system; William J. Wilkins, chairman Board of Public Works.

S. C., Lake City.—Deep Creek Lumber Co., Norfolk, Va., contemplates, it is reported, constructing electric light and power plant.

Tenn., Henderson.—Priestley-Loyd Light & Power Co. organized with C. W. Priestley president and manager; A. C. Loyd, Jr., vice-president; P. R. Priestley, secretary-treasurer; purchased machinery for 80-horse-power electric plant; at present will erect sheet-metal building; later will construct reinforced concrete structure. (Recently noted incorporated with \$10,000 capital stock.)

Tex., Handley.—Northern Texas Traction Co., Fort Worth, Tex., increased capital stock from \$4,500,000 to \$6,000,000; improvements planned for coming year include enlargement of power-house and installation of 5000-kilowatt turbine with adequate boilers and other equipment at Handley.

Tex., Houston.—Houston Electric Co., M. R. Daly, manager, will expend about \$150,000 to improve power facilities.

Tex., Lott.—Lott Electric Co. will rebuild electric-light plant.

Va., Altavista.—Altavista Water Co. and Altavista Light & Power Corporation formed to take over water and lighting plants of Altavista Land & Improvement Co. (See "Water-works.")

W. Va., Huntington.—J. A. Burns, owner Grand Theater, will install power plant in moving-picture theater on Third Ave.; O. B. Colburn has contract for installation.

FERTILIZER FACTORIES

Va., Irvington.—Carter's Creek Fish Guano Co. increased capital stock from \$100,000 to \$150,000.

FLOUR, FEED AND MEAL MILLS

Ky., Lebanon.—Modern Mill & Elevator Co. will erect flour mill; daily capacity, 50 barrels.

La., New Orleans.—George Sears, John Marks and others will incorporate company with \$100,000 capital stock to establish feed mill.

N. C., Greensboro.—North State Milling Co. organized with A. S. Cate, president; J. C. Morris, vice-president; G. G. Hendrick, secretary-treasurer; open bids March 15 to erect building; 40x70 feet; ordinary construction; cost \$6000; machinery purchased; daily capacity 150 barrels flour, feed and meal. (Recently noted incorporated with \$50,000 capital stock.)

FOUNDRY AND MACHINE PLANTS

Ark., Blytheville.—Machine Work, etc.—Blytheville Construction Co. has purchased machinery for machine shop to manufacture machine work, etc.; has 30x100-foot galvanized-iron building; W. M. Hollister, president; W. M. Long, vice-president; P. O. Eckels, secretary; L. Gee, treasurer. (Recently reported incorporated under "Miscellaneous Enterprises" with \$12,000 capital stock.)

Fla., Tampa.—Machine Shop.—Gulf Iron Works will expend \$5000 to erect addition to machine shop; 50x100 feet; corrugated iron;

loss of \$100,000 to \$150,000; details not determined.

Mo., St. Louis.—Machinery.—Acme Machine Works incorporated with \$6000 capital stock by J. W. Ellbrecht, F. Boercker and Margaret Boercker.

N. C., Charlotte.—Machinery.—Julian L. Lumus is interested, it is reported, in establishment of machinery manufacturing plant; capital stock to be from \$50,000 to \$100,000.

Okla., Ardmore.—Farm Machinery.—Carl Lowenson of Davenport, Ia., contemplates erecting plant to manufacture farm machinery.

Okla., Tulsa.—Boiler and Oil-well Supplies. J. H. McEwen of McEwen Bros. of Wellsville, N. Y., is having plans prepared for erection of factory; 100x200 feet; steel construction; cost \$6000; machinery purchased; daily capacity 150 barrels flour, feed and meal. (Recently noted incorporated with \$50,000 capital stock.)

Tenn., Chattanooga.—Boilers.—Walsh & Weidner Boiler Co. increased capital stock from \$150,000 to \$200,000; will erect additional shop building to contain three departments, one being to provide increased facilities for manufacture of steel tanks. Company wires Manufacturers Record: "We will erect building 90x150 feet, steel construction, for taking care of increased boiler business and erection of tanks of all kinds." Company further states that as soon as bids are in will proceed with construction, with view to rapid completion.

GAS AND OIL DEVELOPMENTS

Ark., Fort Smith.—Southwestern & General Gas Co. increased capital stock from \$300

Tex., Houston.—Hindman-Barlow-Scott Oil Co. incorporated with \$20,000 capital stock by S. J. Hindman, R. T. Barlow, F. H. Scott and others.

ICE AND COLD-STORAGE PLANTS

Fla., Daytona Beach.—Schantz Electric, Ice & Water Co. will build ice plant. (See "Water-works, Fla., Seabreeze.")

Fla., Jacksonville.—Jacksonville Ice Co. incorporated with \$25,000 capital stock by Louis J. Nathan, Paul J. Nathan and R. S. Monk.

Fla., Palatka.—Consumers' Ice Co. organized with J. B. Finn president, H. D. Atkinson secretary, H. Merwin treasurer; will establish 15-ton ice plant; equipment ordered.

Fla., Seabreeze.—Schantz Electric, Ice & Water Co. will build ice plant. (See "Water-works.")

Ga., Barnesville.—Meyers Ice Co., W. H. Mitchell, president, is ready to receive bids to erect ice plant building; ordinary and mill construction; cost \$10,000; cost of machinery \$6000; A. F. Meyers of Dickson, Tenn., is manager. (See "Machinery, etc., Wanted.")

Ky., Crab Orchard.—Edmund H. Anderson, Nicholasville, Ky., will install ice and cold-storage plant of 4 tons capacity. (See "Electric Plants.")

Ky., Fullerton.—J. N. Brickey contemplates establishing ice plant and cannery either in Fullerton or South Portsmouth, Kentucky.

Ky., Hopkinsville.—Peter Fox Sons Co. purchased local cannery; will install refrigerating and ice machinery.

Ky., Williamsburg.—S. W. Easley contemplates building ice plant; two or three tons capacity.

La., Crowley.—Austin Halleck and associates contemplate erection of ice and cold-storage plant.

La., Ville Platte.—L. J. Dossman, Opelousas, La., has municipal franchise for 20-ton ice and electric-light plants.

Md., Baltimore.—Louis Eckels & Sons, 1704-1708 Gough St., will erect two-story boiler-house and workshop at 236-238 S. Regester St.; brick; stone trimmings; concrete foundation; slate roof; 28x28 and 28x32 feet; ordinary construction; cost \$4000; construction by company.

Miss., Gulfport.—A. J. Clavire & Co., New Orleans, La., will build cold-storage plant to cost \$7000.

Tenn., Memphis.—Southern Packing & Provision Co. will install 40-ton ice plant; contract awarded. (See "Canning and Packing Plants.")

Tex., Corpus Christi.—Desel-Boettcher Company, Charles L. Desel, president, Houston, Tex., will erect cold-storage plant; two stories; 60x120 feet; fireproof construction; date of opening bids not determined. (Recently noted.)

Va., Norfolk.—Pender Grocery Co., D. Pendler, president, will install refrigerator plants for meats, fish, oysters, clams and dressed poultry; cold-storage plant, 42x15 feet, equipped with ice machine for capacity of 16 tons in 24 hours; second cold-storage plant will have 150 feet refrigerated display cases, almost entirely enclosed in plate glass; install plant pump, pipes to be carried beneath surface and across street to transmit cold air to refrigerators in present building; cost \$15,000; machinery ordered.

Va., Richmond.—W. S. Forbes & Co., 10th and Byrd Sts., awarded contract to H. L. Driscoll Construction Co. to erect addition to plant; fireproof, steel and concrete; will store tanks from third floor of present building to street floor of new addition; contract price \$10,344; plans by Carl Ruehrmund of Richmond; machinery purchased. (Recently noted.)

IRON AND STEEL PLANTS

Ala., Bessemer.—Iron Furnace.—Tennessee Coal, Iron & Railroad Co., Birmingham, Ala., will blow in Furnace No. 1; capacity, 225 tons daily.

Ala., Birmingham.—J. C. Maben, Jr., vice-president Sloss-Sheffield Steel & Iron Co., states appropriation has not yet been made for repairs to No. 4 furnace at North Birmingham. (Recently noted.)

Ala., Holt.—Iron Furnace.—Central Iron & Coal Co., 37 Wall St., New York, is reported as to rebuild furnace and increase daily capacity to 3000 tons iron at cost of more than \$300,000.

Tenn., Mt. Pleasant.—Iron Furnace.—Rockdale Iron Co. has blown in furnace.

LAND DEVELOPMENTS

Ala., Birmingham.—North Side Land Co. incorporated with \$50,000 capital stock; R. P.

McDavid, president; F. L. Bivings, vice-president; Godfrey Goldman, secretary-treasurer.

Ala., Gadsden.—E. M. Stewart will expend \$30,000 to develop 40-acre tract as residential suburb to be known as Lookout Mountain Terrace of Gadsden; will construct winding boulevard 50 feet wide on 4 per cent. grade, with cement sidewalks and guttering; construction within 60 days; company not organized. (Mr. Stewart recently noted to organize company with \$40,000 to \$50,000 capital stock.)

Ala., York.—McConnell Land Co. has elected J. A. McConnell president, M. E. McConnell vice-president, J. P. McConnell secretary-treasurer; will develop 2000 to 7000 acres of land; develop town lots and 10 to 20-acre farms; other industries contemplated; plans not determined. (Recently noted organized with \$50,000 capital stock.)

Ala., Woodlawn, Station Birmingham.—Woodlawn Realty & Development Co. Incorporated with \$2000 capital stock; E. J. Smyer, president; C. C. Campbell, vice-president; G. C. Crane, secretary-treasurer.

Ark., Drew County.—Southwestern Land Co., T. F. Vankirk, general manager, Pittsburgh, Pa., plans development of 10,000 acres land in Drew, Desha and Chicot counties; will divide into 50-acre farms for colonization; erect residence and barn, drill well, equip with implements and live-stock for each farm.

Fla., Alachua County.—Alachua County Colonization Co., 711 Southern Bldg., Washington, D. C., has elected W. E. Haskell president, Alfred C. Brown secretary, J. P. Welcher treasurer; will develop 30,000 acres of land; subdivide in tracts; townsite improvements contemplated. (Recently noted incorporated with \$500,000 capital stock at Alexandria, Va.)

Fla., Tallahassee.—Tallahassee Land Co. organized with W. O. Miel, president, 222 First National Bank Bldg., Denver, Col.; H. H. Barbee, secretary-treasurer, 29 Independent Bldg., Colorado Springs, Col.; will develop 22,000 acres of land in Leon, Wakulla and Jefferson counties; improvements include clearing land for cultivation and developing into 40-acre tracts or more; also install small plants to treat lighter pine for turpentine, and domestic sawmills. (Recently noted incorporated with \$500,000 capital stock.)

Ga., Albany.—Park and Tree Commission, I. J. Hofmayer, chairman, has commissioned Otto Katzenstein, Brown-Randolph Bldg., Atlanta, Ga., to supervise and lay off Tift Park, which has 38 acres of land; improvements include buildings and driveways to cost \$500.

Ga., Macon.—Suburban Realty Co. purchased land in Vineville and will develop suburban residential section; construct sewers and sidewalks, lay gas and water mains, etc.; cost of improvements, \$15,000.

La., New Orleans.—City Farms Co. Incorporated with \$250,000 capital stock; Arthur H. Denis, president; Charles A. Denis, vice-president; Cecil G. Hewes, secretary; Thos. D. Westfeldt, treasurer.

Md., Baltimore.—The Essex Company, 210 Union Trust Bldg., engaged Reding & Howard, civil engineers, 604 Hoffman Bldg., Baltimore, to plat 1000 acres and lay out walks, roads and drives; property is located between Back and Muddy rivers and is owned by Taylor Land Co., 210 Union Trust Bldg. According to map prepared, tract is to be divided into 9000 building lots, each 50x150 feet; for present it is proposed to develop about 100 acres for building purposes, and balance has been divided into farms of from 5 to 10 acres.

Md., Baltimore.—Bayard Harbor Co. incorporated with \$5000 capital stock by John J. Watson (president West Arlington Realty Co., 763 Calvert Bldg.), William P. Bolt and Laura L. Pfeiffer.

Miss., Dunbar.—Industrial Development Co. Incorporated with \$100,000 capital stock by J. L. Enoch, W. S. Craft, M. S. Enoch, A. F. Wortman and others.

Mo., Kansas City.—Kansas City & Memphis Farms Co. Incorporated with \$50,000 capital stock by W. H. Chapman, H. D. Ashley, M. C. Chapman, W. C. Dewey and W. S. Gilbert.

Mo., St. Louis.—Park Lawn Cemetery Association, Charles Moder, president, and Southern Securities Co., Alvin J. Plack, president, acquired 33.26 acres on Lemay Ferry Rd. and will develop as cemetery; will divide property into 600 12x16-foot lots, construct roadways and walks, build receiving vaults, etc.

Mo., Ripley County.—Charles O. Ozias, Warrensburg, Mo., purchased 26,000 acres in

Ripley county for \$325,000 and will colonize; establish townsite of 480 acres and divide balance of tract into small farms.

N. C., Wilmington.—Fidelity Development & Investment Co., D. N. Chadwick, Jr., president, Southern Bldg., purchased 600 acres along Federal Point Rd. south of Wilmington and will develop as suburban residential park—Boyd Park; will reserve 100 acres along river front for park purposes and divide balance into building lots, 30x200 feet; improvements will include macadam roads, concrete sidewalks, water and sewer systems, etc.; drill artesian wells to furnish water for water and sewer systems. (Previously noted.)

Okla., Hugo.—Northwestern Townsite & Immigration Co. Incorporated with \$5000 capital stock by B. W. Williams, C. L. Webb and A. A. McDonald.

Okla., Oklahoma City.—Eastern Oklahoma Land Co. Incorporated with \$4000 capital stock by E. Hammond Jones, P. R. Mattocks and M. F. Owens of Oklahoma City and Harry R. Hinton of Muskogee, Okla.

S. C., Charleston.—East Bay Improvement Co. Incorporated with \$10,000 capital stock by W. B. Wilbur and W. C. Wilbur.

Tex., Bishop.—F. Z. Bishop, Corpus Christi, Tex., purchased 20,000 acres near Bishop for \$500,000; will cultivate and colonize.

Tex., Fort Worth.—Southwestern Land Corporation Incorporated with \$20,000 capital stock by W. R. Townsend, W. T. Coleman and Claude C. Hayes.

Tex., Pescadito.—F. P. Bickenbach, El Paso, Tex., plans development of 3300 acres land for town; will change name Pescadito to Bickenbach; will promote location of canneries, broom factory, syrup mills, ice factory, electric-light plant, brick works, cotton factory, woolen mill and other industries; also locate farmers, etc.

Tex., Pecos.—W. H. Baker of Owensboro, Ky., will develop about 300 acres of irrigated land near Hoban for pear orchard.

Va., Norfolk.—Virginia Farm Development Corporation Incorporated with \$500,000 capital stock; W. T. Phillips, president; W. D. Stoakley, vice-president; D. T. Kennedy, secretary-treasurer, all of Kenbridge, Va.

Va., Salem.—Salem Orchard Corporation Incorporated with \$50,000 capital stock; O. W. Bunting, president, Wilmerding, Pa.; C. A. Cittins, secretary, East McKeesport, Pa.; C. I. Miller, treasurer, Wilmerding, Pa.

Va., Staunton.—Eager Orchard Co. Incorporated with \$25,000 capital stock; W. G. Eager, president; A. Oglivie, vice-president; E. J. Eager, secretary-treasurer; has 40 acres of land under development 12 miles from Staunton. (Recently incompletely noted.)

LUMBER MANUFACTURING

Ala., Decatur.—H. H. Hitt Lumber Co., Falkville, Ala., purchased Cathcart lumber plant property and will establish mill; wires Manufacturers Record: "New mill, 8-foot band; 12-inch saws; shotgun feed; live rolls; steam set works; cut 45,000 feet; plant will consist of mill, drykiln, dry sheds, planing and dimension mills, and extensive yards."

Ala., Fayette.—Baskett Lumber & Manufacturing Co. Incorporated with \$25,000 capital stock by Lee Baskett, Miley Baskett, Hilary Baskett and Thomas Baskett.

Ark., Arkansas City.—Grayling Lumber Co., Geo. E. Breece, president, main office, 1610 Ford Bldg., Detroit, Mich., is proceeding with erection of recently-noted hardwood mill; construction by company; plans by W. S. Eggleston; machinery supplied; capacity, 100,000 feet per 10 hours.

Ark., Camden.—Sam Grayson purchased \$10,000 worth of timber land and will erect sawmill.

Ark., Okolona.—Charles Nelmeyer Hardwood Lumber Co., Charles Nelmeyer, president and general manager, has purchased machinery for mill with daily capacity of 50,000 feet of timber. (Recently noted to have purchased mill, etc., of Keopple & McIntosh.)

Fla., Milton.—W. T. Smith's Sons Timber Co., E. V. Smith, president, 422 Empire Bldg., Birmingham, Ala. (recently reported incorporated with \$50,000 capital stock), will probably erect circular-saw mill of 50,000 feet capacity, with drykilns and planing mills; equipment purchased; contemplates making specialty of export trade, with Pensacola, Fla., for shipping point. (Previous notice under Pensacola.)

Fla., Tallahassee.—Tallahassee Land Co., W. O. Miel, president, 222 First National Bank Bldg., Denver, Colo., will develop 22,000 acres of land in Leon, Wakulla and Jefferson counties; install small plants to treat lighter pine for turpentine, etc. (See "Land Developments" and "Machinery Wanted.")

Fla., Pensacola.—DeSilva & Boriss purchased Sunders Mill property; will install machinery.

Fla., Terrell.—Hall Lumber Co., Ocala, Fla., has purchased all necessary equipment and replaced drykilns recently reported burned.

Fla., Chatsworth.—Ramhurst Lumber Co. will erect planing mill; will remove plant from Ramhurst, Ga.; no new machinery needed.

Ky., Quicksand.—Mowbray & Robinson, Cincinnati, O., will erect additional sawmill; increase to four band and two circular sawmills with daily capacity 125,000 feet lumber.

Ia., Hammond.—Bankston Bros. will rebuild burned lumber plant.

Miss., Bond.—Bond Lumber Co. will rebuild plant damaged by explosion.

Miss., Brookhaven.—Brookhaven Lumber & Manufacturing Co., E. Pfeifer, president, Hattiesburg, Miss., will expend \$3000 to erect band mill building to replace burned structure; heavy mill construction; bids opened March 7; W. T. Taylor, engineer in charge; cost of machinery \$3500; daily capacity 33,000 feet of rift fly stock. (Recently noted.)

Miss., Monroe—Dowville.—Vernon Lumber Co., Milwaukee, Wis., will erect 25,000-foot capacity sawmill.

N. C., Folkstone.—Wynnewood Lumber Co. will rebuild sawmill reported burned.

N. C., Ronda.—Yadkin Valley Mill & Lumber Co. (recently noted incorporated with \$100,000 capital stock) has elected W. F. Bell president, R. W. Hickerson vice-president, secretary-treasurer; will operate lumber plant. (See "Machinery Wanted.")

Tenn., Greeneville.—Moore Lumber Co., \$50,000 capital stock, incorporated by W. G. Todd, A. C. Craig and others.

Tenn., Johnson City.—Wilson & Powell organized with \$40,000 capital stock by Joe A. Wilson and Ferdinand Powell to establish lumber and stave plant; purchased Harrington Farm for \$13,000 and will cut timber; machinery purchased.

Va., Norfolk.—Atlantic Lumber Co., capital stock \$50,000, incorporated; F. R. Barry, president; William W. Dey, secretary-treasurer.

Va., Saltville.—Desand Land & Lumber Co. Incorporated with \$25,000 capital stock; C. W. Desand, president; P. K. Couk, vice-president; H. H. Jacocks, secretary-treasurer.

Ky., Louisville.—Chimney Caps.—F. W. Ferguson, 1600 Rosewood Ave., is interested in company organizing to manufacture chimney caps; has not purchased machinery. (See "Machinery Wanted.")

Md., Baltimore.—Metal Materials.—Philipp-Kell Company Incorporated with \$10,000 capital stock by Edgar C. Philipp, Ernest A. Philipp, Henry Philipp (all of Henry Philipp & Sons, 423 N. Calvert St.) and others.

N. C., Asheville.—Metal Shingles, etc.—A. L. McLean & Co. (A. L. McLean and C. J. Patterson) will manufacture metal shingles, cornices, skylights, ventilators, blow pipe, etc.; office, 95 Patton Ave. (Recently noted to have leased building and to equip for manufacturing shingles.)

Okla., Tulsa.—Sheet Metal.—Tulsa Sheet Metal Co. Incorporated with \$2000 capital stock by Thomas J. Byrne, William Risherbarger and Gertrude E. Risherbarger.

MINING

Ala., Ashland—Graphite.—Alabama Graphite Co. Incorporated with \$25,000 capital by A. A. Northern, B. W. Pruet, M. L. Ritter and others.

Ala., Talladega—Marble.—William T. Coniff, Birmingham, Ala., wires Manufacturers Record: "Moretti-Harrah Marble Co., capital stock \$100,000; president, Giuseppe Moretti, Florence, Italy; vice-president, Charles T. Harrah, Havana, Cuba; secretary and treasurer, Leonard E. Brownson, Havana; extensive quarry operation; cream white marble." (C. J. Harrah mentioned in January as contemplating development of marble deposits.)

Ark., Little Rock—Rock.—Blue Trap Rock Co. Incorporated with \$50,000 capital stock; Chris Ledwidge, president; S. L. White, vice-president; W. D. Cammack, secretary-treasurer.

Ky., Soldier—Asphalt.—S. M. Bradley, Morehead, Ky., contemplates organization of company to develop asphalt deposits. (Previously noted to develop 5000 acres of asphalt land.)

Miss., Hattiesburg—Gravel.—Leaf River Gravel Co. will double daily output of mines;

erect sand bins, etc., for leading gravel, install engine and boiler with pump, etc.

Mo., Carthage—Lead and Zinc.—Red Ant Mining Co. organized with H. G. Tanger president, Samuel McWilliams vice-president, Charles Carter secretary-treasurer; has first lease of 80 acres and proposes development.

Mo., Kansas City—Fluorspar.—Western Reserve Fluorspar Mining Co. Incorporated with \$2000 capital stock by Charles Boob, P. W. Miller and E. E. Rosenberg.

Mo., Kansas City—Lead and Zinc.—Yellow Jacket Mining Co. Incorporated with \$400 capital stock by D. A. Mansur, O. W. Sparks, W. F. Scott and J. T. Lafferty.

Mo., Spring City, R. F. D. from Joplin—Lead and Zinc.—Birthday Mining Co. contemplates erecting concentrating plant.

Mo., St. Louis—Copper.—Camden Copper Co. Incorporated with \$100,000 capital stock by George M. Heath, M. H. Wolfe, E. W. Schoenfeld and B. Leopold.

N. C., Hewitt—Rock and Lime Plants.—North Carolina Talc & Mining Co., telegraph office, Nantahala, N. C., is erecting stone crusher for dolomite and marble; also erecting continuous burning lime plant; contemplates increasing capacity within year.

Okla., Creta—Dolomite, etc.—Southwestern Quarry Co. organized to develop dolomite and gypsum products on 80 acres land; will issue bonds for \$50,000; fiscal agents, A. L. Muller and Co. of Poteau, Okla.; president and general manager, J. C. Drew; vice-president, C. L. Norsworthy; secretary-treasurer, L. D. Thomas; main offices at Dallas, Tex.

Okla., Granite—Granite.—Ruggles Granite Co. Incorporated with \$250,000 capital stock by W. S. Ruggles, E. A. Ruggles and S. D. Williams.

Tenn., Memphis.—Millington Land & Mining Co. Incorporated with \$12,000 capital stock by Eugene Wood, J. N. Cooper, George W. Pryor, A. F. Clements and W. P. Biggs.

Tenn., Memphis—Sand and Gravel.—Mercantile Sand & Material Co. organized with \$50,000 capital stock; O. K. Robertson, president; H. W. Brennan, vice-president and treasurer; V. E. Schevenel, secretary; will dredge sand and gravel from Mississippi River; daily capacity, 1200 cubic yards; machinery purchased.

Tenn., Sweetwater—Iron.—Vida Ore & Manufacturing Co. (recently reported to be incorporated with \$300,000 capital stock by W. D. Gilman and others) now preparing to install plant to ship 1000 tons daily; ore dustlike in fineness; will be cinder for use; contemplates operation within 60 days; C. D. Smith, Memphis, Tenn., president and general manager. Others interested are W. L. Smith of Memphis, Harry Watkins of Birmingham, Ala., W. L. Dickinson of Chicago, Ill., and E. Waugh of New York. (Recent item mentions purchase and development of 210 acres, with proposition to install trams and incinerating plant.)

Va., Lynchburg—Manganese.—Piedmont Manganese Corporation chartered by R. R. Livingstone and Charles T. Hennig of 2 Rector St., New York; M. R. Ireland of London and others; purchased 315 acres manganese land; price reported as nearly \$500,000; has options on 1500 acres adjoining; construct spur track from Chesapeake & Ohio Railway; build plant at reported cost of \$250,000; grind manganese for paints, glass, disinfectants, etc., and ship largely for use in steel manufacture.

MISCELLANEOUS CONSTRUCTION

Fla., Carrabelle—Dredging.—Government awarded contract to Home Dredging Co., Mobile, Ala., for dredging channel 18 feet deep to wharves at Carrabelle; work will involve removal of 80,000 to 100,000 cubic yards sand and mud; G. D. Fitch, Lieutenant-Colonel, Engineers, U. S. Engineers Office, Mobile, Ala. (Call for bids lately noted.)

Fla., Tampa.—City will dredge slip 50 feet wide from Government channel in Hillsborough River to concrete bulkhead at foot of Whiting St.; depth of 10 feet below top of concrete bulkhead; Board of Public Works, D. B. McKay, chairman, will receive bids until March 19. (See "Machinery Wanted.")

Miss., Jackson—Monument.—A. Weibels Marble & Granite Co. of New Orleans, La., has contract for monument to be erected to memory of Women of Confederacy; total cost, \$15,000, of which \$3000 will be for granite base and pedestal.

Miss., Long Beach—Seawall.—City is considering construction of seawall for protection of beach; has proposition submitted by River, Rail & Construction Co. of Jackson, Miss.

Tex., Red Bluff—Dam.—Clark Land Co. of

Roswell, Tex., awarded contract to Irvin & Son to construct concrete dam.

Tex., San Antonio—Lake, etc.—Trustees Blue Wing Club contemplate providing lake to cover 300 acres; 150 acres now inundated; additional water from artesian well. (See "Miscellaneous Structures.")

Tex., Texarkana—Levee.—Bowie county will vote March 28 on \$50,000 bond issue for construction of levee along Red River in Levee District No. 1. Address County Commissioners, Boston, Tex.

Va., Norfolk—Bulkhead.—Colonial Place Corporation secured permit to construct proposed bulkhead along water front on Tanner's Creek; about 5000 feet of bulkhead and filling low land in rear of bulkhead; cost \$30,000; later will construct concrete wall; contract awarded; J. M. Baldwin, 94 Brooke Ave., Norfolk.

Va., Norfolk—Pier.—E. H. Barnes Company contemplates rebuilding old pier and constructing new pier on property of Southern branch of Elizabeth River; general offices at 11 Broadway, New York.

Va., Norfolk—Pier.—T. S. Southgate secured permit to build pier on north side of Eastern Branch of Elizabeth River above Broad Creek, adjoining Elizabeth River Park; pier to be 100 feet long and 30 feet wide at outer end.

MISCELLANEOUS ENTERPRISES

Ala., Birmingham—Construction.—Jemison Construction Co. incorporated with \$5000 capital stock; A. L. Jemison, president; G. N. Smaridge, vice-president; H. A. Burns, secretary.

Ala., Birmingham—Engineering.—Wheelock Engineering Co. incorporated with \$4000 capital stock; Charles F. Wheelock, Jr., president; H. S. Stickle, secretary-treasurer.

Fla., Pensacola—Creosoting Plant.—Southern Paving Construction Co., Chattanooga, Tenn., awarded all contracts to erect creosoting plant; two buildings, 100x26 feet and 100x22 feet; fireproof construction; cost of plant complete, \$75,000; machinery order placed; daily output 70,000 feet of timber. (Recently noted.)

Fla., St. Petersburg—Laundry.—R. Chaffey, William, W. Va., purchased site 100x120 feet for \$6000, and will, it is reported, erect steam laundry.

Ga., Atlanta—Plumbing.—Stewart & Hunt incorporated with \$5000 capital stock by J. G. and C. D. Stewart and W. H. and J. T. Hunt.

Ga., Atlanta—Soda Water.—Sterling Soda Co. incorporated with \$5000 capital stock by Russ Stovall, Wesley R. Mellican, R. Emmett Reynolds and C. H. Hunt.

Ga., Savannah—Mill Supplies.—Savannah Supply Co. organized to succeed Hartfelder-Garbutt Company; H. M. Lofton, president, Chattanooga, Tenn., and John H. Strous, secretary-treasurer, Savannah.

Ky., Lexington—Printing.—Citizens' Printing & Publishing Co. incorporated with \$6000 capital stock by Clarence Egbert, Daniel J. Crowe, James J. O'Brien, George A. Farra and Margaret R. Turner.

Ky., Covington—Dry Cleaning.—Paris Dry Cleaning Co. increased capital stock from \$10,000 to \$30,000.

Ky., Louisville—Paving Contracting.—Bickel Asphalt Paving Co. incorporated with \$30,000 capital stock by Henry Bickel, Jacob Bickel, Theodore Bickel and George Bickel.

Ky., Louisville—Building.—F. Wible Curry Building Co. incorporated with \$15,000 capital stock by F. Wible Curry, John J. Davis and Summers Davis.

Ky., Louisville—Grain Elevator.—Kentucky Elevator Co. increased capital stock from \$150,000 to \$200,000.

La., New Orleans—Road Construction.—Petrolithic Good Road Department Co. chartered with \$25,000 capital stock; president, J. Y. Sanders; vice-president, T. P. Thompson; secretary and office manager, E. L. Chappius; chief engineer and general manager, Howard Egleston; offices, Hibernia Bank Bldg. (Recently noted organized, etc.)

Md., Baltimore—Printing.—Cecil Calvert Press incorporated with \$5000 capital stock by Edward O'Hare (439 E. 25th St.), L. Edward Wolfe and Frank O'Hare, Jr.

Md., Baltimore—Steamboat Transportation. Eastern Shore Steamship Co. incorporated with \$100,000 capital stock by Harry E. Karr (603 Law Bldg.), John I. Rowe and John D. Nock.

Md., Baltimore—Printing.—Franklin Printing Co. incorporated with \$50,000 capital stock by Samuel D. Lowenstein (president Lowenthal-Wolf Company, 220 E. Baltimore St.), Milton D. Lowenthal and Eli Frank.

Md., Baltimore—Printing and Binding.—Thomas & Evans, 210 Guilford Ave., will make alterations to building recently purchased at 217-219 Guilford Ave.; construct vestibule entrance of glass and panel work; show window; equip second floor for composing-room; convert lower floor, having 5000 square feet, into pressroom and bindery; partition 18x23-foot office; plate-glass window sashes; ornamental metal work for ceilings, etc.

Miss., Gulfport—Abattoir.—A. J. Claverie & Co., New Orleans, La., will build slaughter pens; cost \$6000.

Mo., Kansas City—Publishing.—Southwest News Co. incorporated with \$75,000 capital stock by G. Wald, George R. Lathrop and C. H. Dette.

Mo., Kansas City—Bindery.—Pharnowitz Bindery Co. incorporated with \$2500 capital stock by Sidney Loeb, W. H. Maloney and Regina Pharnowitz.

Mo., Kansas City—Cleaning and Dyeing.—Gentry-Forsythe Cleaning & Dyeing Co. increased capital stock from \$3000 to \$7000.

Mo., St. Louis—Cleaning and Pressing.—Downtown Cleaning & Pressing Co. incorporated with \$3000 capital stock by Louis H. Fadem, T. Roediger, J. E. Campbell and P. L. Fadem.

Mo., St. Louis—Clocks.—National Talking-Clock Co. incorporated with \$300,000 capital stock by C. C. Carson, H. C. Barkert and William L. Ryan to deal in talking clocks.

Mo., St. Louis—Electrical Supplies.—Independent Electrical Supply Co. of Missouri incorporated with \$10,000 capital stock by Ralph A. Levine, Joseph Mayer and Felix Corinthius.

Mo., St. Louis—Printing and Lithographing.—Gast Bank Note Co. incorporated with \$15,000 capital stock by L. J. Wall, John Schatz and Otto J. Schatz; will manufacture bank notes, etc.

N. C., Wilmington—Printing, etc.—State Press Service Union organized with Joseph W. Little, president; T. W. Clawson, vice-president and general manager; E. G. Burkhead, secretary; F. E. Little, treasurer; will print "patent outside" of weekly newspapers, furnish plates, etc.

Okla., Tulsa—Construction.—Tulsa Electric Construction Co. incorporated with \$6000 capital stock by F. A. Pierce, O. H. Kirkpatrick and E. L. Orr.

Tex., Dallas—Cotton Gins.—Lummus Cotton Gin Sales Co. incorporated with \$5000 capital stock by John P. Illeges, C. C. Hart-pence, C. H. Battle and others.

Tex., Nacogdoches—Oil-distributing Plant.—Magnolia Petroleum Co. (main office, Galveston, Tex.) will erect proposed warehouse and tanks.

Tex., Pittsburgh—Hardware.—Nelson-Crumpel Hardware Co. incorporated with \$10,000 capital stock by L. J. Nelson, A. F. Crumpel and C. H. McClure.

Va., Clarendon—Concrete Contracts.—Washington Hollow Wall Concrete Co. incorporated with \$25,000 capital stock; H. P. Baines, president, 1524 Newton St. N. W.; A. G. Drake, secretary and treasurer, both of Washington, D. C.

Va., Lynchburg—Printing.—Dulaney-Boatwright Printing Co. organized with \$25,000 capital stock to succeed Boatwright Bros. of Danville, Va.; will establish printing plant in Lynchburg, with branch office at Danville in charge of J. O. Boatwright; J. M. Dulaney, president, Lynchburg; J. O. Boatwright, vice-president, Danville; J. R. Marsh, secretary, Roanoke, Va., and C. C. Rhame, treasurer, Danville. (Recently stated to build plant in Danville.)

Va., Lynchburg—Printing.—Dulaney-Boatwright Printing Co. organized with \$25,000 capital stock; Charles E. Harper, president; S. Heth Tyler, vice-president; Lida Harper, secretary-treasurer, all of Piners, Va.

Va., Salem—Laundry.—Drury B. Baskerville is interested in organization of stock company to establish Wet Wash Laundry Co. (See "Machinery Wanted.")

W. Va., Princeton—Printing.—Mercer Printing Co. incorporated with \$10,000 capital stock by W. B. Honaker, E. W. Hale, J. H. Gadd, C. B. Hedrick and J. H. Lilly.

MISCELLANEOUS FACTORIES

Ala., Birmingham—Adding Machines.—Edwin Williamson, Anniston, Ala., contemplates establishment of plant in Birmingham to manufacture patented adding machines.

Ala., Birmingham—Winery.—Southern Wine & Importing Co. incorporated with \$10,000 capital stock; N. Catanzano, president; R. McAvoy and others.

Giacopassi, vice-president; W. T. Latham, secretary-treasurer.

Ala., Gadsden—Frogless Railroad Switch.—J. M. Walker is interested in organization of company to manufacture frogless railroad switch patented by him.

Ala., Thorsby—Dental Supplies.—Northrup Manufacturing & Supply Co., C. E. Northrup, president, awarded contract to Wm. J. Williams, Jemison, Ala., for erection of proposed plant; main building one story, 30x50 feet; separate building to be equipped with oil-burning engine to furnish power for machinery and electric lights.

Ark., Black Rock—Bottling.—Blackwell Bros. will install bottling equipment in ice plant.

Fla., Jacksonville—Ginger Beer.—Southern Ginger Beer Co. (recently noted incorporated with \$100,000 capital stock by T. B. Norris, Barker Bldg., Atlanta, Ga., and others) is having plans prepared for plant; construction by May 1; capacity 8000 dozen bottles of ginger beer per week. (See "Machinery Wanted.")

Fla., Jacksonville—Syrup.—South Atlantic Bottling Co. incorporated with \$50,000 capital stock by H. S. Weinberg, W. L. Simpson and Percy P. Vyle.

Ga., Atlanta—Automobile Guard.—Auto Life Guard Co., 702 Forsythe Bldg., organized with \$100,000 capital stock; W. W. Talbot, president; J. H. Dow, secretary-treasurer; J. R. Houchin, engineer; will manufacture patented automobile guard; at present device will be manufactured by contract; later will install plant.

Ga., Atlanta—Vending Machines.—Braswell Vending Machine Co. incorporated with \$25,000 capital stock by B. B. Braswell, W. W. Turner and Leo Sudderth to manufacture vending machines.

Ga., Athens—Gas.—Athens Gas, Light & Fuel Co. will be incorporated with \$250,000 capital stock by John Gribbel, F. Newburger and W. H. Roberts; acquire Athens Gas Co.; extend gas mains and increase capacity of plant.

Ga., Dublin—Bottling.—J. W. Geeslin, Macon, Ga., will establish coca-cola bottling plant.

Ga., Macon—Bakery.—Company will be incorporated with \$25,000 capital stock by Henry Merkle of Macon and J. W. Plew and C. E. Sears of Chicago, Ill., to establish bakery; erect building; daily capacity 50,000 loaves bread.

Ga., Rome—Signs.—United Sign Manufacturing Co. incorporated with \$25,000 capital stock by C. S. Sparks of Rome, Frank Sparks of Chattanooga, Tenn., and Charles E. Thurman of Los Angeles, Cal.; will build sign factory.

Ky., Louisville—Hildebrand & Boone will erect brick factory building to cost \$5800.

Ky., Louisville—Corrugated-paper Boxes.—Mengel Box Co. will establish corrugated-paper box factory; capacity 20,000 boxes daily; contract for machinery awarded.

Ky., Louisville—Ear Drums.—Wilson Ear Drum Co. incorporated with \$30,000 capital stock by George H. Wilson, Mattie G. Bailey and Ida B. Wilson.

Ky., Louisville—Artificial Teeth, Mouth-plates, etc.—Hallenberg Company incorporated with \$7500 capital stock by A. L. Hill, C. R. Harned and Edward C. Wurtele.

Ky., Paris—Tobacco Redrying Plant.—Bourbon Loose Leaf Tobacco Warehouse Co. is being organized with \$25,000 capital stock; erect warehouse and later contemplates adding redrying plant.

La., Meeker—Sugar Mill.—Chas. F. Vogel, secretary Meeker Sugar Refining Co., states machinery contracts have been placed and construction of fireproof building in progress; ready for next crop; capacity 1200 tons cane daily; main office at 1515 First National Bank Bldg., Chicago, Ill. (Construction contract previously noted awarded to A. F. Delbert, New Orleans, La.; C. T. Rayner & Son, supervising engineers, 213 N. Peters St., New Orleans.)

La., New Orleans—Rice.—Levy Rice Milling Co. will erect mill; four stories; mill architecture; cost \$40,000; Emilie Well, New Orleans, architect.

La., New Orleans—Rendering Plant.—Zinsel Bros. contemplate establishing rendering plant.

Md., Baltimore—Clothing.—M. Moses & Son, 3 S. Hanover St., leased warehouse, 22x80 feet, at 213 W. German St. and will remodel as clothing factory.

Miss., Jackson—Ice Cream.—Seale-Lily Ice Cream Co. incorporated with \$7500 capital stock by D. D. Seale, E. M. May, E. J. McAvoy and others.

Mo., Joplin—Bottling.—Joplin Coca-Cola Bottling Co. incorporated with \$16,000 capital stock by T. H. Mills, Andrew Jones, R. A. Pearson, D. W. Thomas and others.

Mo., Kansas City—Bottling.—Syndicate Beer Bottling Co. incorporated with \$50,000 capital stock by Frank Josephson, Morris Shure and Samuel Bobrecker.

Mo., Kansas City—Bakery Supplies.—National Bakers' Supply Co. incorporated with \$10,000 capital stock by W. W. Whitehill, W. H. Clark, A. B. Clark and G. O. Whitehill.

Mo., Kansas City—Blau Gas.—Southwestern Blau Gas Co. chartered with \$3,000,000 authorized capital stock by H. F. Lang, Edward F. Webster and W. R. Nicholson of Kansas City, C. H. Petty of Atchison, Kans., and D. E. Palmer of Topeka, Kans.

Mo., St. Joseph—Cushman Manufacturing Co. incorporated with \$75,000 capital stock by Lucian W. Cushman, H. J. Weber and Emily Cushman.

Mo., St. Louis—Corrugated Paper Boxes.—Ruch Corrugated Paper Box Co. incorporated with \$2000 capital stock; Martin Ruch, president; I. A. Ruch, vice-president; E. A. Clarke, secretary; will make corrugated-paper boxes; daily capacity, 500 boxes.

Mo., St. Louis—Clothing.—Beltmann-Kleinhausen Clothing Co. incorporated with \$175,000 capital stock by Irvin Beltmann, Morris Kleinhausen, Joseph B. Kleinhausen, I. Folger and Gustave L. Stern.

Mo., St. Louis—Bottling.—William J. Lemp Brewing Co. will erect bottling plant; two stories; brick; 190x142 feet; cost \$35,000.

N. C., Durham—Tobacco.—Liggett & Myers Tobacco Co., St. Louis, Mo., contemplates no changes or additions to plant recently noted acquired from Duke branch of American Tobacco Co.

N. C., Reidsville—Tobacco.—F. R. Penu Branch of American Tobacco Co. awarded all contracts for erecting tobacco factory; five stories; brick; mill construction; Francisco & Jacobus, 200 Fifth Ave., New York; consulting engineers in charge. (Previously noted.)

N. C., Salisbury—Gas.—North Carolina Public Service Co. has plans for improvement of gas, light and power plants.

N. C., Salisbury—Railway Frog and Switch. Interstate Railway Switch & Frog Co. incorporated with \$250,000 capital stock (not \$30,000 as recently stated) by P. H. Thompson and others; contemplates selecting site and erecting buildings later; plans not definite; organization of company not complete.

N. C., Warrenton—Hasps, Locks, etc.—Jones Hasp & Lock Co. will erect building; ordinary construction; plans not determined; machinery to include stamp presses, dies, tumbling barrels, engines, etc.; Howard F. Jones, president; Spottsworth Burwell, vice-president; T. L. Brodie, secretary and manager. (Recently noted incorporated with \$15,000 capital stock.)

Okl., Oklahoma City—Window Attachment.—J. C. Dunham and J. S. Wakefield organized company to manufacture adjustable window attachment.

Okl., Oklahoma City—Vinegar.—O. L. Gregory Vinegar Co., Paris, Tex., will establish vinegar factory.

S. C., Charleston—Sugar Refinery.—Henry Brist, M. V. Haselden, Julius H. Jahnz and Walter Pringle of Charleston; T. J. Lipscomb of Columbia, S. C., and others are reported as planning erection of refinery (daily capacity, 300 barrels sugar) to cost several million dollars. Mr. Brist wires Manufacturers Record: "Nothing for publication at present."

Tenn., Dyersburg—Brooms.—Dyersburg Broom Co. elected G. D. Bush, president; R. E. Carne, vice-president; M. H. Scott, secretary; has building and machinery; daily capacity 50 dozen brooms. (Recently noted organized.)

Tenn., Memphis—Ink.—Southern Oil & Ink Co. will, it is reported, build ink factory; Charles A. Vaccaro is in charge of Memphis office.

Tex., Alpine—Wax.—Rio Grande Wax Co. will erect plant for extracting wax from candelilla weed; wax for phonograph records, candles, floor polish, etc.; plant will extract one ton wax daily. (Oscar Pascius and associates previously noted to erect wax plant.)

Tex., Beaumont—Bottling.—Beaumont Coca-Cola Bottling Co. incorporated with \$7500 capital stock by Charles V. Rainwater, John C. Vaughan and F. C. Lupton.

Tex., Bell—Bakery.—Marion Craig and others will build bakery.

Tex., Brady—Brooms.—J. W. Embry will build broom factory; machinery ordered.

Tex., El Campo—Peanuts.—O. U. Dahlgren, manager Gloster Oil Co., Gloster, Miss., advises Manufacturers Record erection of peanut oil mill at El Campo is not yet settled. (Recently noted.)

Tex., Orange—Bottling.—Star Bottling Co., N. W. Payne, secretary-treasurer, 606 Front St., has placed contract for machinery for bottling works; building erected. (Recently noted organized to establish plant.)

Va., Highland Springs—Plaster Board.—E. T. Gresham is interested in organization of company to manufacture plaster board. (See "Machinery Wanted.")

Va., Richmond—Ribbon and Carbon.—United Ribbon & Carbon Co. incorporated with \$10,000 capital stock; F. S. Cullen, president; H. B. Carlton, vice-president; D. C. Carlton, secretary-treasurer.

Va., Richmond—Ice Cream.—Shepherd Ice Cream Co., L. K. Shepherd, president, 406 E. Main St., awarded contract to John T. Wilson to erect ice cream factory; two stories; 50x150 feet; fireproof construction; plans by D. Wiley Anderson. (Lizzie Sauer Dunston recently noted to erect factory.)

Va., Roanoke—Optical Goods.—Dr. J. Harry Martin incorporated with \$10,000 capital stock; J. Harry Martin, president; A. L. Martin, vice-president; E. C. East, secretary-treasurer.

Va., Staunton—Acetylene Generators.—Virginia Acetylene Light Co. incorporated with \$5000 capital stock to manufacture lighting generators; H. M. Lewis, president; P. A. Ross, secretary-treasurer.

MOTORS AND GARAGES

D. C., Washington—Garage.—Miss Margaret S. E. Cameron awarded contract to erect garage and residence. (See "Dwellings.")

Md., Baltimore—Garage.—Robert Garrett, 506 Continental Bldg., is having plans prepared by Bissel & Sinkler, Bailey Bldg., Philadelphia, Pa., for garage at Notre Dame and Charles-Street Aves.; one and a half stories; concrete; slate roof; cost \$6000; contractors estimating are L. O. Hildebrand & Bro., 215-17 Courtland St.; John Cowan, 106 W. Madison St.; T. B. Stanfield & Co., 109 Clay St., and Morrow Bros., 218 W. Saratoga St., all of Baltimore.

Md., Baltimore—Garage.—Josephine S. Keenan, 2106 Eutaw Pl., awarded contract to J. J. Duggan, 317 Garrett St., Baltimore, to erect building in rear of residence; one story; brick back; 13x17 feet; cost \$4000.

Mo., Kansas City—Automobiles.—Ohio Motor Car Co. incorporated with \$15,000 capital stock by A. J. Leatherock, T. F. Leatherock and J. E. Brady.

Tex., Taylor—Garage.—Forwood Company will erect garage for A. B. Dozier Company; corrugated iron; concrete floor.

W. Va., Huntington—Auto Trucks.—Jarvis-Huntington Automobile Co. (sales office, 418 Robson Prichard Bldg.; factory, Baltimore & Ohio Railroad and 20th St.) will install machinery. (Previously noted to be incorporated with \$250,000 capital stock by T. L. Millard and others to manufacture auto trucks of three to five tons capacity. See "Machinery Wanted.")

RAILWAY SHOPS, TERMINALS, ROUNDHOUSES, ETC.

N. C., Wilson—Atlantic Coast Line Railroad Co., E. B. Pleasants, chief engineer, Wilmington, N. C., does not contemplate construction of shops at Wilson. (Recently noted.)

Tex., Alvin—Gulf, Colorado & Santa Fe Railroad, F. Merritt, chief engineer, Galveston, Tex., will, it is reported, expend \$5000 for drainage system.

Tex., Galveston—Gulf, Colorado & Santa Fe Railroad, F. Merritt, chief engineer, Galveston, appropriated \$326,000 for terminal yards; \$117,000 for water and fuel stations; \$61,000 for bridges, trestles and culverts; \$55,000 for elimination of grade crossings; \$7000 for block signals; \$88,000 for station buildings and fixtures; \$65,000 for shops, engine-houses and turntables; \$5000 for shop machinery and tools; \$2000 for wooden tank in west yards.

Tex., Hitchcock—Gulf, Colorado & Santa Fe Railroad, F. Merritt, chief engineer, Galveston, Tex., will, it is reported, expend \$5000 for construction of steel tank.

Tex., Roseburg—Gulf, Colorado & Santa Fe Railroad, F. Merritt, chief engineer, Galveston, Tex., will, it is reported, expend \$2000 for drainage system.

Tex., Sealy—Gulf, Colorado & Santa Fe Railroad, F. Merritt, chief engineer, Galveston, Tex., will, it is reported, expend \$5000 for construction of steel tanks.

Tex., San Antonio—San Antonio, Uvalde & Gulf Railroad, J. E. Franklin, president, will, it is reported, erect shops and depot at Terrell Wells; site comprises 30 acres.

W. Va., Princeton—Virginian Railway Co., H. Fernstrom, chief engineer, Norfolk, Va., awarded contract at \$25,000 to Roanoke Bridge & Iron Co., Roanoke, Va., for iron and steel work on locomotive and repair shops; contract calls for about 500 tons of iron and steel. (Lately noted.)

W. Va., Wheeling—Wheeling Traction Co. contemplating erecting car shop; plans not complete.

ROAD AND STREET WORK

Ala., Uniontown—City will lay concrete walks, curbs and gutters recently noted; cost \$10,000; bids asked; D. P. Coleman, Mayor. (See "Machinery Wanted.")

Ala., Chatom.—Washington County Commissioners will receive bids until April 6 for grading, draining and surfacing with top soil about five miles State Aid road; W. S. Keller, State Highway Engineer, Montgomery, Ala. (See "Machinery Wanted.")

Ala., Gadsden.—E. M. Stewart is interested in organization of company to develop 40-acre tract of land; will construct winding boulevard 50 feet wide with 4 per cent. grade and cement sidewalks and guttering. (See "Land Developments.")

Ark., Little Rock—Street Improvement District No. 186, S. W. Reyburn, chairman, will expend \$30,000 to \$40,000 to construct 14 blocks, or about 302,400 square feet, of asphalt, creosoted blocks or vitrified brick on concrete base; W. F. Reichardt, Reigler Bldg., Little Rock, engineer in charge. (Recently noted to receive bids until March 20.)

Ala., Marion—Perry county selected Geo. C. Seales, engineer, to supervise construction of roads; \$110,000 bond issue authorized. (Previously mentioned.)

Ark., Little Rock—Commissioners of Street Improvement District No. 192 (W. 7th St.) will construct 16,850 square yards of paving; A. Brizzolars, chairman of district; Ford & MacCrea, engineers of district. (See "Machinery Wanted.")

Ark., Little Rock—Board of Commissioners of Improvement District No. 197, J. F. Houck, chairman, 309 Main St., receives bids until March 20 for grading, draining, curbing and paving with macadam, tarvia macadam or bituminated concrete 10,000 square yards; Ford & MacCrea, engineers, 338 Gazette Bldg., Little Rock. (See "Machinery Wanted.")

D. C., Washington—Commissioners District of Columbia ordered various street improvements to cost about \$125,000; William V. Judson, engineer commissioner of District.

Ga., Atlanta—City awarded contract to Southern Tile & Stone Co. for paving sidewalks with tile and to Cement Tile & Stone Co. for repair tile work; R. M. Clayton, chief of construction. (Call for bids lately noted.)

Ga., Cedartown—City will vote April 8 on \$20,000 bond issue for street paving. Address The Mayor.

Ga., Fitzgerald—City awarded contract to Alabama Paving Co. of Birmingham to pave four blocks on Pine and Grant Sts. with vitrified brick on four-inch concrete foundation; H. S. Jaudon, engineer, Savannah, Ga. (Recently incorrectly noted.)

Ky., Louisville—Board of Public Works will open bids March 18 for construction of granitoid sidewalks on Madison, 15th, Cedar, 13th, Walnut and other streets.

Ky., Mt. Sterling—Street Commission will expend \$25,000 to construct 12,000 square yards of brick pavement on concrete foundation; C. C. Peters, engineer in charge; contract recently noted awarded to L. W. Hancock & Co., Louisville, Ky.

La., Crowley—W. S. White, City Engineer, will prepare plans for paving Parkerson Ave.

Md., Baltimore—City will receive bids until March 20 for grading, draining and revetment of roadbed 14 feet wide from point south of Bayview Junction to power-house of Bayview Asylum; work will require 5800 cubic yards excavation, 40 linear feet 24-inch T. C. pipe, 100 cubic yards concrete retaining walls and 12 linear feet 24-inch cast-iron drain pipe; H. K. McCay, City Engineer.

Mo., Hannibal—City awarded contract to Ratcliffe-Gibson Construction Co., St. Joseph, Mo., to construct 100,000 square feet of sidewalk at 11 cents per square yard for walks, 40 cents per cubic yard for grading and \$10 per cubic yard for retaining wall; B. F. Smiley, City Engineer. (Previously noted.)

Miss., Collins—Covington county will arrange for proposed road construction; \$15,000 for construction of steel tanks.

bond issue available. Address County Commissioners.

Miss., Guntown—First District of Lee County will construct 12 miles of gravel road; 6 inches deep and 11 feet wide; work to include grading, hauling and laying gravel; cost \$50,000; date of opening bids not determined; probably open bids in 30 days; O. P. Norton, Commissioner. (Bond issue recently noted voted.)

Miss., Crenshaw—Town invites bids on construction of 28,000 square feet concrete sidewalk. Address Town Clerk. (See "Machinery Wanted.")

Miss., Leakesville—Greene County Supervisors contemplate \$25,000 bond issue for road improvements.

N. C., Asheville—City, J. T. Bostic, street superintendent, will construct 10,000 to 20,000 square yards of concrete sidewalks; B. M. Lee, City Engineer; bids opened March 15. (Recently noted. See "Machinery Wanted.")

N. C., Hendersonville—Flat Rock Good Roads Club, R. J. Lowndes, vice-president, will construct sand-clay road from Mud Creek (city limits) to King's Creek at Flat Rock, about four miles; cost \$200.

N. C., Hillsboro—Orange county will vote on \$250,000 bond issue for construction of macadam roads. Address County Commissioners.

N. C., Lagrange—City defeated \$30,000 bond issue for road improvements, etc., recently noted; A. Sutton, Mayor. (See "Water-works.")

N. C., Lumberton—City will pave Elm St. from 6th St. to railroad tracks; bituminous macadam; cost about \$10,000. Address The Mayor.

N. C., Monroe—Union County Commissioners, T. J. Gordon, chairman, will vote March 23 on \$200,000 bond issue for road construction; J. E. Stewart, clerk. (Recently noted to vote May 23 on bond issue.)

N. C., Newton—Newton township of Catawba county voted \$50,000 bond issue for road construction. Address County Commissioners. (Recently mentioned.)

N. C., Wilmington—City will grade and pave with granite blocks on sand foundation 9000 square yards of street; also pave about 10,000 square yards sidewalks; bids received until March 12; F. F. Pillett, City Engineer.

Okla., Lawton—City Commissioners will expend \$160,000 to construct about four miles of paving; contract was let to C. H. Shaw of Lawton and transferred to C. H. Shaw and W. F. Warfield of Chickasha, Okla.

Okla., Tulsa—City's plans for paving include about five blocks of sheet asphalt and brick top laid on five-inch concrete base; cost \$19,000; T. C. Hughes, City Engineer; contract recently noted awarded to Eureka Construction Co. of Tulsa.

S. C., Fort Mill—City awarded contract to Legare Construction Co. of Columbia, S. C., at \$375 to improve Main St. with bitumen binder.

S. C., Greenville—William G. Sirrine, president Greenville-Henderson Highway Association, states plans for construction of road over mountain ridge are not ready; entire work will be in charge of J. P. Goodwin, county supervisor of Greenville county. (Recently noted to have secured \$3000 appropriation.)

S. C., Newberry—City will lay about 5000 square yards vitrified block pavement; bids received until March 20; P. S. Norris, civil engineer, Aiken, S. C.; J. R. Scurry, City Clerk. (See "Machinery Wanted.")

Tenn., Charlotte—Dickson county defeated issuance of \$100,000 bonds for road construction. Address Commissioners. (Lately noted.)

Tenn., Chattanooga—City will expend \$26,000 to construct 14,200 square yards of asphalt macadam in Ridgedale; E. E. Betts, engineer in charge; contract recently noted awarded to Goodrich & Crinkley, Harriman, Tennessee.

Tenn., Livingston—Overton county voted \$150,000 bond issue for road construction. Address County Commissioners. (Recently noted.)

Tenn., Spencer—Van Buren county (recently noted to have voted \$50,000 bond issue) will construct pikes; cost \$50,000; bids opened March 30; J. L. Walker, C. M. Clark and J. M. Haston, Commissioners. (See "Machinery Wanted.")

Tenn., Tullahoma—Moses Parks, A. P. Ray, W. S. Danes, Horace Byrom and W. S. McLaughlin are promoting construction of 30-foot rock and gravel macadam road from Tullahoma to Awalt, Tenn.

Tenn., Bastrop—Bastrop County Road Precinct will vote April 2 on \$100,000 bond issue

for construction of 40 miles of road. Address County Commissioners. (Recently mentioned.)

Tex., Bonham—Anderson Construction Co. of Dallas, Tex., has contract for constructing 15 blocks of concrete walks.

Tex., Carroll Springs—City will expend \$6000 for street grading and bridge building; E. E. Baird, engineer in charge; J. A. Clift, Mayor; bond issue of \$5000 recently noted voted. (See "Machinery Wanted.")

Tex., Corpus Christi—City will expend \$150,000 in street improvement; date of opening bids not set; H. A. Peabody, engineer in charge; Clark Pease, Mayor. (Recently noted to vote on \$150,000 for street improvement.)

Tex., Dallas—Dallas County Commissioners awarded contract to Culmon & Bavousett for constructing three miles of rock road on West Dallas pike.

Tex., Orange—Orange county will construct 150 miles of shell and gravel roads; cost \$200,000; engineer not selected; date of opening bids not set. Address County Commissioners. (Recently noted.)

Tex., Terrell—City will expend \$45,000 to improve streets and water-works; street improvements will include 20,000 square yards of paving; date of opening bids not set; Irving R. Beall, engineer, Terrell. (Recently noted.)

Tex., Terrell—City awarded contract to I. C. Sherwood to construct 4447 linear feet concrete sidewalk on N. Blanch and E. High St.

Va., Fredericksburg—City will vote on \$30,000 bond issue for street improvements. Address The Mayor.

Va., Lynchburg—City will pave Rivermont Ave.; 50,000 cubic yards excavation; 18,000 cubic yards trench excavation; 56,000 square yards paving; 23,000 linear feet curb; plans, etc., at office of H. L. Shaner, City Engineer, Room 202 Krise Bldg.; bids received until noon March 23 by council committee on streets at office of City Engineer. (See "Machinery Wanted.")

Va., Manassas—Prince William county petitioned County Judge to order election for voting on bond issues for road improvements as follows: Manassas district, \$2,000; Brentsville, \$15,000; Gainesville, \$45,000; Occoquan, \$50,000. Address County Commissioners.

Va., Portsmouth—City will improve Chestnut St. from Glasgow to South St. and up intersecting streets to property line; paving of roadway to be of granite blocks and curbing of old bluestone or new granite; bids received until April 2; E. B. Hawks, chairman street committee. (See "Machinery Wanted.")

Va., Richmond—City awarded contract to I. J. Smith & Co. at \$25,000 for resetting curbing, flagging, roadbed, paving, etc., in connection with laying pipe sewers; Charles E. Bolling, City Engineer. (See "Sewers.")

Va., Stafford—Stafford county contemplates voting on \$60,000 bond issue for road improvements. Address County Board of Supervisors.

W. Va., Bluefield—Board of Affairs will pave various streets with bituminous macadam and concrete curb and gutter; about 35,000 square yards of pavement contemplated; bids received until April 5; W. H. Campbell, engineer in charge. (See "Machinery Wanted.")

W. Va., Mannington—Mannington District will vote on issuance of \$250,000 bonds for road improvements; about 25 miles of road to be paved.

SEWER CONSTRUCTION

Ala., Oxford—Town will construct sanitary sewer system; bids opened March 14. Address The Mayor.

Ga., Savannah—City engaged H. S. Jaudon Engineering Co. of Savannah to prepare plans, specifications and other details for house drainage system; \$600,000 bond issue voted. (Previously mentioned.)

Ga., Ocilla—City engaged J. B. McCrary Company, Atlanta, Ga., to make preliminary surveys and submit estimate of cost of sewer system.

La., Vivian—City is having plans prepared for sewer and water systems. Address The Mayor.

Md., Rockville—City contemplates construction of sewer system; considering \$50,000 bond issue; Lee Offutt, Mayor.

Miss., Natchez—City will build several miles eight-inch pipe sewers; Walter G. Kirkpatrick, engineer, Jackson, Miss.; T. K.

Winchester, superintendent, may be addressed.

Mo., Hannibal.—City will readvertise for bids to construct sewer in Palmyra Ave., Sewer District; B. F. Smiley, City Engineer. (Recently noted.)

Mo., Doniphan.—City voted \$16,500 bond issue for construction of sewer system and extension of water mains. Address The Mayor.

Mo., Kansas City.—Board of Public Works awarded contract to T. W. Roberts at \$30,908 to construct intercepting joint district sewer to extend from 30th St. and Cleveland Ave. to Raytown Rd.; vitrified clay and monolithic clay pipe.

N. C., La Grange.—City defeated \$30,000 bond issue for sewers, etc., recently noted; A. Sutton, Mayor. (See "Water-works.")

Okla., Sallisaw.—City awarded contract to Oklahoma Engineering Co., Oklahoma City, Okla., for sewer system. (Recently noted.)

Tex., Calvert.—City is having surveys made preparatory to construction of sewer system. Address The Mayor.

Tex., San Benito.—City will vote April 5 on \$30,000 bond issue for sewer construction; B. Frazier, City Secretary. (Recently noted.)

Va., Richmond.—City awarded contracts to National Construction Co. at \$6167.70 for pipe sewers on U St. from 20th to 23d St.; 23d St. from U St. to city limits; Jacqueline St. from Lady St. to Allen Ave.; Blair St. from Lady St. to Allen Ave.; Ashland St. from Randolph to South Lombardy St.; Windsor St. from Sunter St. to Allen Ave.; to H. L. Driscoll & Co. at \$1392 for pipe sewers on Kemper St. from Lady St. to Allen Ave.; to J. B. Chevning at \$22,29 for pipe sewers on Vine St. from Grove to Floyd Ave.; for sewer on Leonard St. to A. W. Maynard at \$969; for resetting curbing, flagging, roadbed, paving, etc., to I. J. Smith & Co. at \$25,000; material purchased; C. E. Bolling, City Engineer.

W. Va., Huntington.—Board of Commissioners will receive bids until April 1 to construct lateral sewers; B. Maupin, City Engineer. (See "Machinery Wanted.")

TELEPHONE SYSTEMS

Ala., Ashville.—W. B. Johnson and associates will construct telephone system.

Ala., Ashville.—S. R. High, cashier Ashville Savings Bank and associates, will construct telephone system.

Ark., Hot Springs.—Arkansas Telephone & Telegraph Co. will, it is reported, be incorporated with \$100,000 capital stock by John T. Gray, Pittsburgh, Pa., and others, to construct telephone system.

Ky., Olive Hill.—Big Sandy Telephone Co. incorporated with \$10,000 capital stock by H. R. Dysard, W. B. Whit and A. J. Stamper.

N. C., East Bend.—East Bend Telephone Co. incorporated with \$3250 capital stock by John W. Doub, A. M. Smitherman, P. A. Davis and others.

N. C., Welcome.—Davidson Telephone Co. incorporated with \$5000 capital stock by J. C. Ripple, N. L. Hinkle, E. J. Zimmerman and Franklin Hoover.

Okla., May.—May Telephone Co. Incorporated with \$3500 capital stock by J. E. Feather, Joe Phillips and T. M. Fleming.

Okla., Rossville (not a postoffice).—Rossville C. Linn Telephone Co. incorporated by C. Platz, W. Ringrey, J. V. Thomas, G. M. Gentry and C. M. Conley, all of Wellston, Okla.

TEXTILE MILLS

Ala., Eufaula—Sheetings, etc.—Cowikee Mills will, it is reported, erect building and install 8000 spindles; now has 12,352 ring spindles, 320 broad looms, etc.

Ga., Athens—Cordage.—Mallison Braided Cord Co. will install new machinery, replacing old equipment; has awarded contracts; operates 2000 ring spindles, 11 broad looms, 150 braiders, etc.

Ga., Lagrange—Cotton Duck.—Lagrange Mills will add 5000 spindles, 63 cards, 6 lapers, etc.; awarded contracts; erected \$8x90-foot building for new machinery; engineers in charge, Lockwood, Greene & Co., 96 Federal St., Boston, Mass.; present mill has 10,000 ring spindles, 100 looms, etc.; controlled by International Cotton Mills Corporation, 96 Worth St., New York.

N.C., Albemarle—Cotton Yarns.—Wiscasset Mills Co. will erect building and install machinery to spin card strips and comber waste into coarse yarns; now has 70,000 ring spindles, etc.; report states new spindles will be 15,000.

N. C., Charlotte—Cotton Yarns.—Magnolia Mills will, it is reported, erect building and install 12,000 spindles, together with 6144 ring spindles in present building.

N. C., Concord—Cotton Warps.—Franklin Cotton Mill will, it is reported, install 15,000 spindles in three-story 100x200-foot additional building recently noted as contracted for.

N. C., Goldsboro—Hosiery.—Durham Hosiery Mills, Durham, N. C., will erect additional building two stories high, 50x100 feet; has begun construction.

N. C., Granite Falls—Carpet Yarns.—Granite Falls Manufacturing Co. will erect additional story on 75x27-foot building, as lately stated; will install 1000 spindles, 30 cards, etc.; all contracts awarded; total cost, \$30,000.

N. C., Hickory—Cotton Cloth.—W. H. Shuford and associates are, it is rumored, planning organization of \$1,000,000 company to build cotton mill. Mr. Shuford wires Manufacturers Record: "Nothing definite for publication; only contemplating."

N. C., High Point—Cotton Yarns.—William H. Ragsdale of Jamestown, N. C., is reported as planning erection of cotton-yarn mill to have 5000 spindles.

N. C., High Point—Hosiery.—Durham Hosiery Mills, Durham, N. C., is planning to erect three-story brick building, but states exact size has not been determined. (Lately mentioned.)

N. C., Kannapolis—Bleached Sheeting.—Cannon Manufacturing Co. will, it is reported, build additional mill and probably bleachery; mill to have 30,000 spindles; main offices at Concord, N. C.

N. C., Rockwell—Cotton Yarns.—Barringer Manufacturing Co. increased capital stock from \$150,000 to \$300,000; has 3000 ring spindles, steam power, etc.

N. C., Winston-Salem—Sheeting, etc.—Arista Mills Co. increased capital stock from \$350,000 to \$500,000; writes to Manufacturers Record: "As to any changes in plant, our plans have not been formulated;" present equipment includes 16,184 ring spindles and 368 narrow looms.

S. C., Greenville—Cotton Cloth.—Brandon Mills have, it is reported, awarded contract for ten additional new spinning frames.

Va., Suffolk—Hosiery.—Bell Hosiery Mills increased capital stock from \$25,000 to \$50,000.

WATER-POWER DEVELOPMENTS

Ala., Cherokee Bluffs.—Alabama Traction, Light & Power Co. plans first development at Cherokee Bluffs, on Tallapoosa River, 100,000 horse-power available; initial development of 60,000 horse-power; engineers estimate cost of first development at \$83 per horse-power; construction to include masonry dam 850 feet long and 130 feet high, forming storage reservoir with capacity of 65,000,000 cubic feet; Coosa River power site is near proposed transmission line between Cherokee Bluffs and Birmingham, and can be connected with it; Muscle Shoals, on Tennessee River, will be developed after United States Government extensive improvements now proposed; Alabama Traction, Light & Power Co. is holding corporation; Alabama Interstate Power Co., Charles H. Baker, president, 225 West End Ave., New York, will undertake construction; contemplates ultimate development of 400,000 horse-power.

Ala., Fort Deposit.—Little River Power Co., R. A. Mitchell, Gadsden, Ala., is reported as preparing to begin construction of dam for its proposed hydro-electric plant on Little River.

Md., Leitersburg, R. F. D. from Hagerstown.—George H. Bowman, J. Elmer Newcomer, R. D. No. 5, Hagerstown, Md., and others contemplate erecting electric-power plant at Old Forge, on Antietam Creek, near Leitersburg; will rebuild dam in creek; furnish electricity for lighting and power to Chewsville, Cavetown, Smithsburg, Ringgold and Leitersburg; estimated cost of power-house and transmission line, \$50,000.

Tex., Seguin.—Guadalupe Water-Power Co. incorporated with \$600,000 capital stock by J. M. Abbott of Seguin, W. B. Dunlap of Beaumont, Tex., and E. W. Brown of Orange, Tex.; will build hydro-electric plant on Guadalupe River to develop 800 horse-power for transmitting electricity to Austin, San Antonio, Lockhart, etc. Mr. Abbott wires Manufacturers Record: "Contemplate five dams; wheels and dynamos at each; consolidate energy of all at one point; cost estimated at \$500,000; expect to develop 400 horse-power; decide later for what uses; interurban only contemplated."

WATER-WORKS

Ala., Union Springs.—City voted \$5000 bond issue for constructing water tower. P. L. Cowan, City Clerk.

Ala., Stevenson.—City voted \$14,500 bond issue for construction of water-works; J. K. Shofner, Mayor. (Recently mentioned.)

Ark., Benton.—J. R. Packard of Speer & Dow, Fort Smith, Ark., has municipal franchise to construct water-works, including 10,000-gallon standpipe.

Ark., Dermott.—City awarded contract at \$9,000 for additional well and 100,000-gallon tank for water-works; will lay 3000 feet of main; other improvements contemplated. Address The Mayor.

Ark., Springdale.—City contemplates construction of water-works. Address The Mayor.

Fla., Daytona Beach.—Schantz Electric, Ice & Water Co. secured franchise to construct water-works. (See Fla., Seabreeze.)

Fla., Seabreeze.—Schantz Electric, Ice & Water Co. secured franchises to construct water-works and electric-light plants in Seabreeze and Daytona Beach; will build ice plant in connection.

Ky., Hopkinsville.—Hopkinsville Water Co. will expend \$15,000 to install pumping station; 2,000,000 gallons capacity; erect 24x24-foot building; brick; tile roof; contracts for pump and engines have been let. (Recently noted.)

Ky., Vivian.—City is having plans prepared for water and sewer systems. Address The Mayor.

Md., Baltimore.—C. B. Clark & Co., Huntingdon Ave. and 31st St., North Baltimore, are lowest bidders at \$368,400 for construction of storage reservoir dam across Gunpowder River at Loch Raven, to have capacity of 2,000,000,000 gallons; Ezra B. Whitman, 2422 N. Charles St., is engineer. (Further facts lately noted.)

Mo., Doniphan.—City voted \$16,500 bond issue for extension of water mains and construction of sewer system. Address The Mayor.

Mo., St. Louis.—Anheuser-Busch Brewing Association will erect coagulating plant; capacity 6,000,000 gallons water daily; also reinforced concrete circular reservoir, 150 feet in diameter and 20 feet deep, to contain 4,000,000 gallons; plans by Edward Flad of St. Louis; contract for filter plant awarded to Kellermann Contracting Co. of St. Louis at about \$35,000; for reservoir to Fruhl-Collon Contracting Co. of St. Louis at about \$50,000, and subcontract to drive piling to St. Louis Underground Construction Co.

N. C., La Grange.—City defeated \$30,000 bond issue for water-works, sewers, electric-light plant, road improvements, town hall and market-house; A. Sutton, Mayor. (Recently noted.)

Okla., Sallisaw.—City awarded contract to Oklahoma Engineering Co., Oklahoma City, Okla., for water-works extension. (Recently noted.)

S. C., Florence.—City contemplates voting on \$115,000 bond issue for construction of water-works; estimates submitted by Gilbert C. White, engineer, Durham, N. C.; William J. Wilkins, chairman Board of Public Works.

Tenn., Jellico.—City will install two 750,000-gallon pumps, two 75-horse-power internal-furnace boilers and open feed-water heater; construct brick pumphouse; bids received until March 19; Walter G. Kirkpatrick, engineer, Jackson, Miss. (See "Machinery Wanted.")

Tex., Corpus Christi.—W. A. Fitch is having plans prepared and will be ready in about 90 days for constructing reservoir covering about 1700 acres of land; depth of 15 feet and impound 7,000,000,000 gallons of water to supply city of 50,000 inhabitants; install two to four large pumps at river; also two large pumps to raise water to uplands and small pump to irrigate 1000 acres; water to supply city will flow from reservoir along coast line by gravity distance of seven miles; has option on 3000 acres of land seven miles from Corpus Christi; area has natural basin bounded on south by bluff 46 feet high and on north by peninsula 12 to 15 feet high. (Recently noted.)

Tex., Terrell.—City will expend \$45,000 to improve water-works and streets; water-works improvements include four new wells and laying one mile of new main; date of opening bids not set; Irving R. Beall, engineer, Terrell; H. Galbraith, chairman.

W. Va., Elkins—Boxes.—Elkins Box Co. incorporated with \$100,000 capital stock by Hugh P. McIlraith and Joseph Penner of New Castle, Pa.; John D. McIlraith of Anderson, Ind.; James E. Munroe of Chicago, Ill., and William Munroe of Muskegon, Mich.

construction of proposed water-works. Address The Mayor.

Va., Altavista.—Altavista Water Co. and Altavista Light & Power Corporation formed to take over water and lighting plants of Altavista Land & Improvement Co.; no new construction or extension contemplated; J. E. Lane, president. (Recently noted as Altavista Light & Water Corporation, incorporated with \$30,000 capital stock.)

WOODWORKING PLANTS

Ala., Mobile—Furniture.—Gateway Furniture Co. incorporated with \$50,000 capital stock; N. F. Thompson, president; D. J. Spottswood, vice-president; J. E. Thompson, secretary-treasurer.

Ark., Camden—Doors.—American Manufacturing Co., B. C. Rockwell, president, has plans by and awarded contract to C. F. Writers, Malvern, Ark., to erect ordinary mill-construction buildings costing \$800; purchased woodworking machinery. (Change of name from Camden Mill Co. and bond issue recently noted.)

Ark., Heber Springs—Cooperage.—H. D. Williams Cooperage Co., Leslie, Ark., will not establish recently-reported plant at Heber Springs.

Ark., Leola—Staves.—W. M. McDonough, Ripley, Miss., will establish factory; daily capacity 10,000 staves; machinery ordered.

Ga., Macon—Axe Handles.—B. Jordan, Monticello, Ga., will establish axe-handle factory.

Ga., Waycross—Sash, Doors, etc.—Waycross Sash, Door & Manufacturing Co. incorporated; will be reorganized from South Atlantic Car & Manufacturing Co.; D. S. Schureman, promoter; contemplates manufacture of sash, doors, blinds, interior and exterior house furnishings, school and office furniture, cooperage, etc. (D. S. Schureman previously noted to establish variety wood works.)

Ky., Lexington—Carriages.—J. V. Uppington will erect carriage factory.

La., Shreveport—Boxes.—Shreveport Cottonwood Co. will establish box factory on Red River; use cottonwood and cypress timber.

Mo., Kansas City—Ironing Boards.—Home Ironing Board Co. incorporated with \$5000 capital stock by W. M. Henson, F. S. Hoffine and E. S. Snider.

N. C., Greenville—Cooperage.—Greenville Cooperage & Lumber Co., H. B. Miner, president, will erect main building 72x34 feet, wing 34x24 feet, steam kiln 45x24 feet, and two dry kilns 40x35 feet each; ordinary construction, costing \$16,000; construction by company; Jay Smith, engineer in charge, Norfolk; cost of machinery, \$10,000; daily capacity, 45,000 staves and 6000 headings for barrels. (Recently noted incorporated with \$100,000 capital stock and to have taken over plant of Greenville Lumber & Veneer Co.)

Tenn., Johnson City—Staves.—Wilson & Powell organized by Joe A. Wilson and Ferdinand Powell to establish stave and lumber plant. (See "Lumber Manufacturing Plants.")

Tenn., Manchester—Staves.—N. P. Steele, Sol Putnam and N. B. Putnam, all of Tullahoma, Tenn., will establish stave mill.

Tex., Waco—Coffins.—Texas Coffin Co., M. M. Patten, president, will erect additional brick veneer factory building; 60x150 feet.

W. Va., Elkins—Boxes.—Elkins Box Co. incorporated with \$100,000 capital stock by Hugh P. McIlraith and Joseph Penner of New Castle, Pa.; John D. McIlraith of Anderson, Ind.; James E. Munroe of Chicago, Ill., and William Munroe of Muskegon, Mich.

BURNED

Ala., Eutaw.—Jarvis Building, owned by F. P. Jarvis of Birmingham, Ala.; loss \$10,000.

Ala., Moundville.—N. L. Whitfield's residence; loss \$5000 to \$10,000.

Ark., Pine Bluff.—Southern Mercantile Building at 23-25 State St., owned by M. W. Gibb of Little Rock, Ark., and Ferd Harris and Jake Mosby, both of Pine Bluff; loss \$20,000.

Fla., Bagdad.—Stearns Lumber Co.'s dry kiln; loss \$10,000.

Ga., Atlanta.—Jesse Sewell's two stores and residence; loss \$4000.

Ga., Moultrie.—Holmes-Hartfield Company's warehouse; loss \$40,000.

Ky., Cynthiana.—William Adams' residence on Elmarch Ave.; loss \$6000.

Ky., Detroit.—Forman Earl Company's lumber plant; loss \$40,000.

Ky., Madisonville.—Benevolent Protective Order of Elks' building; loss \$7000.

Ky., Pewee.—R. Brooks Brown's residence; loss \$4000.

La., Abita Springs.—Abita Springs Lumber Co.'s planing mill and dry kiln; loss about \$12,000; mill owned by J. P. Rausch.

Md., Ellicott City.—Frank Baldwin's residence at Patapsco Heights; loss \$3000.

Miss., Ellisville.—McKinnon Lumber Co.'s planing mill.

Miss., Greenwood.—Jewish Synagogue. Address The Rabbi, Jewish Synagogue.

Miss., Magnolia.—Thomas C. Simmons' saw and planing mill.

Miss., Meridian.—Clift-Williams Machinery Co.'s plant; reported loss \$150,000.

Miss., Union.—A. C. Freeman's store, loss \$12,000; J. D. Gray's store, loss \$3000.

Mo., Kansas City.—Cooper & Woolworth's store at 1104-6 Walnut St.; loss \$4000.

N. C., Folkstone.—Wynnewood Lumber Co.'s sawmill.

Okla., Marietta.—Building occupied by Marietta Drug Co. and others; loss \$32,000.

S. C., Alken.—W. R. Dobson's cotton gin; loss \$2500.

S. C., Ehrhardt.—Hacker Lumber Co.'s plant, loss \$100,000; Carolina Gin Co.'s ginnery, loss \$6000; Atlantic Coast Line Railroad Co. E. B. Pleasants, chief engineer, Wilmington, N. C., platforms, cars, etc., loss \$25,000.

S. C., Williston.—Building occupied by A. E. Owens; office of Dr. W. C. Smith; loss \$5000 to \$10,000.

Tenn., Dickson.—Stores occupied by N. F. Johnson, Zoilie Springer and Melvin Harris.

Tenn., Friendship.—Friendship Mill Co.'s four mill.

Tenn., Jackson.—First Methodist Church; loss \$20,000; J. L. Weber, pastor.

Tenn., Livingston.—Dr. R. L. Burk's residence; loss \$7000.

Tex., Amarillo.—Curtis Drug Co.'s store; loss \$15,000.

Tex., Bronson.—Parrs & Henry's sawmill; loss \$5000.

Tex., Bedias.—E. L. Hall & Son's building, loss \$5000; Bedias Advocate's building, loss \$2500.

Tex., Nocona.—Warren & Fooske's store, loss \$25,000; Mrs. Carmichael's building, occupied by Nocona Drug Co., loss \$3000.

Tex., Floydada.—Hesperian Building; T. P. Steen's printing plant; loss \$5000.

Tex., Fort Worth.—Fort Worth Furniture Co.'s plant; loss \$100,000.

Tex., Lubbock.—Warren Bacon's two buildings, occupied by Radford Grocery Co. and Seitz Grain Co.; loss \$3500.

Tex., Sweetwater.—Magnolia Oil Co.'s warehouse; loss \$7000.

Va., Fredericksburg.—R. M. Rowe's dairy barn and two silos.

Va., Richmond.—C. Lumdsen & Son's store at 731 E. Main St.; loss \$25,000.

Va., Richmond.—Thomas J. Nichols' warehouse; loss \$8000.

Va., Stevensburg.—E. A. Chewning's store, loss \$15,000; G. H. Hitt's store.

W. Va., Enterprise.—F. M. Hawkins' building, loss \$5000; I. R. & W. S. Tetric's store, loss \$4000.

W. Va., Grafton.—L. T. Hornlein's residence on Lincoln St.; loss \$3000.

Tex., Chattanooga.—R. H. Hunt and J. S. Rodriguez will erect store and apartment building on East 7th St.; three to five stories; brick.

Tex., El Paso.—Great Texas Realty Co. will open bids March 15 to erect apartment-house; 9x124 feet; three stories; semi-fireproof; hot-water heat; electric lighting; cost \$50,000; plans by J. R. Fisk. (Recently noted.)

Tex., Galveston.—B. G. Tarr has plans by Stowe & Stowe, Galveston, and will receive bids until March 25 to erect apartment-house at Tremont & Winnie Sts.; 20 suites of four rooms and bath; three stories; pressed brick; construction to permit erection of additional stories; 74x86 feet; cost \$40,000.

Tex., Galveston.—A. L. Scudder will erect apartment-house at Boulevard and 31st St.; two stories.

Va., Richmond.—Matthew Gilmour will erect detached two-story brick tenement-house on Park Ave. between Addison and Elm Sts.; cost \$18,000.

Ala., Birmingham.—Mrs. Susan O. Luckie will erect apartment-house; to contain four five-room apartments with bath; brick veneer; fireproof roofing; hot-air heat; electric lighting; cost \$8500; construction by C. F. Luckie.

Ga., Atlanta.—Mrs. M. H. Garner has plans by A. Ten Eyck Brown, Atlanta, for apartment-house on North Ave.; three stories; six apartments; cost \$25,000.

Ga., Augusta.—J. C. Wingfield will erect store and apartment building. (See "Stores.")

Ky., Paducah.—Jack Cole, Paducah, has contract to erect proposed Wilcox Apartments at 6th St. and Kentucky Ave.; two stories; seven apartments.

La., New Orleans.—Abe Britt is reported as to erect apartment-house at Jackson Ave. and Prytania St.

Md., Baltimore.—Dr. T. A. Ashby, 1125 Madison Ave., is having plans prepared by Theodore Wells Pletsch, American Bldg., for apartment-house on Dolphin St., between Madison Ave. and Eutaw Pl.; 50x50 feet; three stories; will also remodel residence at Madison Ave. and Dolphin St. into apartment-house.

Mo., Kansas City.—C. O. Jones will erect store and apartment building. (See "Stores.")

Mo., Kansas City.—C. H. Elliott has plans by Otto Goddard, Kansas City, for apartment-house at 1326-28 E. 10th St.; 24 apartments; three stories; brick; cost \$45,000.

Mo., St. Louis.—A. Saril will erect two-story tenement-house at 5834-36 Garfield St.; cost \$5200.

Mo., St. Louis.—Arthur D. Thompson will erect apartment-house on Washington Blvd., between Whittier St. and Pendleton Ave.; cost \$25,000.

Mo., St. Louis.—F. J. Cornwell & Son, 810 Chestnut St., will expend \$42,000 to erect apartment-house; three buildings; three stories; 43x56 feet; ordinary construction; plans and construction by owners.

Mo., St. Louis.—T. J. O'Loughlin, 806 Chestnut St., will open bids about March 15 to erect three-story apartment; joist construction; cost \$8000; United Building Co. probable contractor.

Mo., St. Louis.—R. Moderacke will erect two two-story tenement-houses; cost \$14,500.

N. C., Greensboro.—Chamber of Commerce is interested in erection of apartment-house; 8 to 10 stories; elevator service.

S. C., Spartanburg.—Otto Zable and E. L. Stallings are reported as to erect apartment-house on S. Church St.

Tenn., Jackson.—Lodge No. 1121, Benevolent Protective Order of Elks, Julius P. Herbert, exalted ruler, will erect lodge building.

La., Monroe.—Monroe Lodge, Benevolent and Protective Order of Elks, will erect Elks' home; 40x100 feet; brick; steam heat; cost \$30,000; plans not approved; construction will not begin for several months. (Recently noted.)

Mo., Alton.—Ancient Free and Accepted Masons will remodel Masonic Temple to provide additional lodgerooms and store on ground floor.

N. C., Wilmington.—Young Men's Christian Association inaugurated campaign to terminate March 16 for \$75,000 to erect building; five stories; ordinary construction; steam heat; electric lighting; plans by Hunker & Cairns, 528 Schimlar Bldg., Memphis; cost of structure, \$350,000; contract let about July 1.

Tenn., Sharon.—Citizens' Bank of Sharon contemplates erecting bank building.

Tex., El Paso.—El Paso Gas & Electric Co. will erect office and supply rooms.

Tex., Mertens.—Guarantee State Bank, W. McFarlen, president, will erect bank building. (See "Machinery Wanted.")

Tex., San Antonio.—J. M. Watson has plans by Behles & Boelhauwe, San Antonio, for office building at E. Houston and Jefferson Sts.; 16 stories; reinforced concrete; fireproof; four passenger and one freight elevator; approximate cost, \$300,000. (Previously noted.)

W. Va., Benwood.—Bank of Benwood approved plans by M. F. Gelsay, Wheeling, W. Va., for bank building. (Recently noted.)

CHURCHES

Fla., Blountstown.—Baptist church has plans by Frederick Ausfield, Montgomery, Ala., for edifice.

Fla., Tampa.—Tampa Heights Methodist Church, Ross and Central Aves., Rev. Smith Hardin, pastor, will erect edifice to replace present structure; cost about \$35,000.

BANK AND OFFICE

Ala., Birmingham.—Jefferson County Savings Bank will erect one-story brick building on Avenue B, between 20th and 21st Sts.; cost \$4000.

Ala., Georgiana.—Frederick Ausfield, architect, Montgomery, Ala., is preparing plans for bank building. (Farmers and Merchants' Bank recently noted to erect bank building.)

D. C., Washington.—Citizens' Saving Bank, 1406 New York Ave. N. W., leased building at 1421 G St. N. W., adjoining Home Insurance Bldg., recently purchased, and will remodel; main banking-room 25x50 feet; cost \$6000 to \$10,000; no bids.

Fla., Fort Lauderdale.—Dade County Bank will erect bank building; concrete.

Fla., Tampa.—T. C. Tallaferro and Henry Giddens, owners of Giddens block, are reported as to expend \$5000 to remodel third floor of structure for offices.

Ga., Monroe.—A. F. N. Everett, 600 The Grand, Atlanta, Ga., is preparing plans for bank building; 25x60 feet; brick and stucco.

Pa., Winder.—Winder Banking Co. will let contract March 20 to erect bank and office building; 75x90 feet; four stories; concrete and frame; steam heat; electric lighting; American prism glass sidewalks; electric elevator; plans by A. F. N. Everett, 600 The Grand, Atlanta, Ga. (Previously noted.)

Ky., Pineville.—White L. Moss, general manager of Continental Coal Corporation, is interested in organization of company to erect office building; cost not less than \$10,000.

La., Lake Charles.—F. M. Fuller and associates are reported as considering erection of office building; seven stories; 50x133 feet; lower floor for stores; upper floors for offices; iron frame construction; reinforced concrete; cost \$110,000 to \$125,000.

Mo., Bloomfield.—Bloomfield Bank will rebuild bank and office building recently reported burned; 57x80 feet; fireproof construction; hot-water heat; electric lighting; cost \$15,000; architect not selected. (See "Machinery Wanted.")

Mo., Independence.—Reorganized Latter Day Saints will erect office building; three stories; brick; fireproof; several vaults; 80x120 feet; cost \$50,000 to \$75,000.

Mo., Kansas City.—Brokers' Office Warehouse Co. will erect office and warehouse. (See "Warehouses.")

Mo., St. Louis.—Charles W. Wall is having plans prepared by Milligan & Wray for commercial building for stores, offices, etc. (See "Stores.")

Mo., St. Louis.—T. J. O'Loughlin, 806 Chestnut

nut St., will erect two two-story store and office buildings. (See "Stores.")

S. C., Anderson.—R. E. Burriss will expend \$35,000 to erect office building recently noted; 50x105 feet; fireproof construction; hot-air heat; electric lighting; electric elevator; architect not selected. (See "Machinery Wanted.")

S. C., Winnsboro.—Bank of Fairfield will erect bank building.

Tenn., Memphis.—Bank of Commerce & Trust Co., Thomas C. Vinton, president, has plans for bank and office building adjoining and connected with present structure; 17 stories; 33x18 feet; fireproof construction; heating plant to cost \$30,000; lighting plant, \$15,000; six traction type elevators; plans by Hunker & Cairns, 528 Schimlar Bldg., Memphis; cost of structure, \$350,000; contract let about July 1.

Tenn., Sharon.—Citizens' Bank of Sharon contemplates erecting bank building.

Tex., El Paso.—El Paso Gas & Electric Co. will erect office and supply rooms.

Tex., Mertens.—Guarantee State Bank, W. McFarlen, president, will erect bank building. (See "Machinery Wanted.")

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BUILDING NEWS

BUILDINGS PROPOSED

APARTMENT-HOUSES

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N. C., Greensboro.—Chamber of Commerce is interested in erection of apartment-house; 8 to 10 stories; elevator service.

S. C., Spartanburg.—Otto Zable and E. L. Stallings are reported as to erect apartment-house on S. Church St.

ASSOCIATION AND FRATERNAL

Ark., Eureka Springs.—Independent Order of Odd Fellows is arranging to erect lodge building; three stories; brick; O. F. Jasper, F. L. Mattocks and others, committee.

Ark., Rogers.—Benevolent Protective Order of Elks is having plans prepared by A. O. Clark, Little Rock, for lodge building; three stories; cost about \$18,000.

Fla., Tampa.—Salvation Army, J. E. Brezenzale, local commander, plans to erect building; three stories; lower floor for hall; second floor for executive offices, etc.; third floor for lodgings.

Ky., Owensboro.—Masonic Temple Company of Owensboro will receive bids until March 25 for erection of five-story Masonic temple at St. Ann and 3d Sts., according to plans and specifications prepared by James Rely Gordon, 507 Fifth Ave., New York, who will supervise erection, and from whom limited number of sets of drawings and specifications may be obtained on deposit of certified check for \$100 to guarantee safe return, together with delivery within appointed time of bona fide bid accompanied by certified check for \$2000; conditions and other information at office of owner or architect. (Previously mentioned.)

Ky., Louisville.—Young Men's Christian Association is ready to receive bids to erect association building; fireproof construction; steam heat; cost \$300,000; plans by McDonald & Dodd, Louisville, and Shattuck & Hussey, associate architects, Chicago, Ill. (Previously noted.)

Mo., St. Louis.—Charles W. Wall is having plans prepared by Milligan & Wray for commercial building for stores, offices, etc. (See "Stores.")

Mo., St. Louis.—T. J. O'Loughlin, 806 Chestnut

Tenn., Ripley.—First Baptist Church contemplates remodeling edifice at a cost of \$8000; also plans to install \$2000 pipe organ. Address The Pastor, First Baptist Church.

Tex., Huntsville.—Methodist congregation will erect edifice; cost \$25,000. Address The Pastor, Methodist Church.

Tex., Taylor.—Rev. Leonidas Adamakos, pastor of Eastern Greek Church of Fort Worth, Tex., is interested in erection of edifice.

Va., Portsmouth.—Park View Christian Church has tentative plans by Edward Overman, Portsmouth, for edifice; construction to begin about May 1. (Previously noted.)

W. Va., Charles Town.—Baptist congregation will erect edifice. Address The Pastor, Baptist Church.

W. Va., Huntington.—Presbyterian Church, R. F. Carson, secretary, has plans by Fulton & Butler, Uniontown, Pa., for annex to edifice; 60x70 feet; mill construction; steam heat; cost \$25,000; date of opening bids not set. (See "Machinery Wanted.")

CITY AND COUNTY

Ala., Anniston—Jail.—Calhoun County Commissioners adopted plans by H. B. Wheelock, Birmingham, Ala., for jail; cost \$30,000. (Previously noted.)

Ala., Mobile—Warehouses.—City opened bids to erect warehouses on city wharves. Address The Mayor.

Ala., Mobile—Hospital.—Mobile County Commissioners are reported as to make improvements to county poor farm, to include separate apartments for colored and white men, remodeling entire building, installation of city water service, etc.

Fla., Jacksonville—Barracks.—City will probably expend \$10,000 to enlarge barracks by erection of detention quarters for female prisoners and juveniles. Address The Mayor.

Fla., Lakeland—City Hall and Jail.—City is having plans prepared by J. N. Hazelhurst, Atlanta, Ga., for city hall; 40x122 feet; two stories; pressed brick front; rear of lower floor for jail with steel cells; cost \$15,000. (Recently noted.)

La., Coushatta—Jail.—Red River parish will vote April 16 on tax to provide for \$75,000 bond issue to erect courthouse and jail. Address Police Jury.

La., Lafayette—Fire Station.—City will erect fire station. Address The Mayor.

Miss., Greenwood—Jail.—Leflore county is reported as desiring competitive plans for jail. Address Chancery Clerk.

Md., Hyattsville—Municipal Building.—City voted proposition to borrow \$7000 to erect combination municipal and fire department building. Address The Mayor. (Recently noted.)

Mo., Lamont—City Hall.—City voted \$5000 bond issue to erect city hall. Address The Mayor.

Mo., Kansas City—Comfort Station.—Board of Public Works will advertise for bids to erect comfort station; white glazed tile wall; terrazzo floors; stairways five feet wide guarded by ornamental railings; two entrances; cost \$20,000.

N. C., Lagrange—Town Hall, etc.—City defeated \$30,000 bond issue for town hall and market-house, etc., recently noted; A. Sutton, Mayor. (See "Water-works.")

Tenn., Chattanooga—Jail.—Bids received by Hamilton County Commissioners until March 14 to erect jail; plans by Barnwell & Jones, Chattanooga. (Recently noted.)

Tex., Alice—Jail.—Jim Wells County Commissioners will receive bids until March 18 to erect two-story courthouse and jail; plans and specifications at office of architect, Atlee B. Ayres, San Antonio, Tex., on deposit of \$25. (Previously noted.)

Tex., Houston—Jail.—City plans to erect jail; H. B. Rice, Mayor.

Tex., Sterling City—Jail.—Sterling County Commissioners' Court will receive plans, specifications and bids until April 16 to erect jail; cost not to exceed \$9000; sold \$10,000 bond issue.

COURTHOUSES

Ky., Paducah.—McCracken County Commissioners will remodel courthouse.

La., Coushatta.—Red River parish will vote April 16 on tax to provide for \$75,000 bond issue to erect courthouse and jail. Address Police Jury.

Miss., Gulfport.—Harrison County Supervisors, A. J. Bond, president, accepted plans by J. C. Corbett for addition to courthouse; two 20-foot rooms on north and south sides of structure; cost about \$10,000. (Recently noted.)

N. C., Salisbury.—Rowan County Commiss-

sioners are having plans prepared by A. Ten Eyck Brown, Atlanta, Ga., to prepare plans for courthouse; two stories; 137x10 feet; pressed brick and stone; terra-cotta trimmings; steam heat; electric lighting; fire-proof record-room; cost \$125,000; will let contract about May 15. (Recently noted.)

Tex., Alice.—Jim Wells County Commissioners will receive bids until March 18 to erect courthouse and jail. (See "City and County.")

DWELLINGS

Ala., Birmingham.—Hillman-Watts Land Co. will erect nine dwellings on Avenue D near 24th St.; one story; frame; cost \$5000.

Ala., Birmingham.—Louis V. Clark is having plans prepared for bungalow 16 miles from Birmingham, between Chalkville and Clay; construction entirely of logs; cost \$15,000.

Ala., Corey, P. O., Birmingham.—George Pappageorge will erect two one-story frame dwellings; cost \$3500.

D. C., Washington.—Alexander Britton, Munsey Bldg., will erect three-story brick and stone residence at 1811 Q St. N. W.; cost \$22,000.

D. C., Washington.—Kennedy Bros., 1334 H. St. N. W., will erect two three-story and cellar brick dwellings at 2609-11 Woodley Rd. N. W.

D. C., Washington.—John H. Nolan, 1413 G St. N. W., will erect row of three-story brick dwellings on Columbia Rd, near 13th St.

D. C., Washington.—John C. Delchman, 1520 E. Capitol St., will erect three two-story dwellings at 629-33 F St. N. W.; cost \$3750.

D. C., Washington.—Louis H. Emmert, 1110 15th St. N. W., has plans by Appleton P. Clark, Jr., 816 14th St. N. W., for residence at 1620 Wyoming Ave., Washington Heights; five stories; cost \$50,000.

D. C., Washington.—E. P. Brink will expend \$50,000 to erect 12 dwellings; 7 and 8 rooms each; ordinary construction; hot-water heat; gas and electric lighting; plans by E. P. Brink & Son; construction by owner; all sub-contracts let. (Recently noted.)

D. C., Washington.—Harry A. Kite, 1338 G St. N. W., will expend \$4000 each to erect three dwellings; 18x60 feet; ordinary construction; hot-water heat; plans and construction by owner. (Recently noted.)

D. C., Washington.—Dr. J. J. Richardson, 1016 14th St. N. W., has plans by Charles Mason Remey, 1529 New Hampshire Ave. N. W., for residence on Massachusetts Ave. near Rock Creek; cost \$25,000.

Fla., Santa Rosa.—Smith Sons Lumber Co. Incorporated at Pensacola, Fla., by W. T. Smith, Jr., and others, all of Birmingham, Ala., will receive bids to erect 40 or 50 dwellings, etc. (See "Hotels.")

Fla., Tampa.—A. C. LeClair will erect residence at Newport and Cleveland Sts.; two stories; brick; cost \$4000.

Ga., Atlanta.—Paul Wesley will erect two dwellings; colonial style; cost \$14,000.

Ga., Atlanta.—W. W. Strong, 364 Oak St., will expend \$4000 to erect two six-room dwellings; ordinary construction; grates; gas and electric lighting; plans by owner; day labor. (Recently noted.)

Ga., Atlanta.—Dr. Champion has plans by A. F. N. Everett, 600 The Grand, Atlanta, for dwelling at Druid Hills; two stories; brick veneer; slate roof; electric lighting; cost \$10,000.

Ga., Atlanta.—Piedmont Investment Co. will erect dwelling on Westminster Drive; two stories; frame; cost \$3500.

Ga., Atlanta.—Mrs. Rosa D. Ross will erect two-story frame dwelling; cost \$3500.

Ga., Atlanta.—Cliff C. Hatcher, Grant Bldg., will erect two residences; brick veneer; cost \$7000 each.

Ga., Atlanta.—Winship Nunnally, Sr., has plans by Hents & Reid, Candler Bldg., Atlanta, for dwelling; two stories and basement; frame; steam heat; cost \$10,000.

Ga., Atlanta.—Mr. Barnes has plans by Hents & Reid, Candler Bldg., Atlanta, for dwelling; two stories; frame; cost \$5000.

Ga., Atlanta.—J. T. Daniel will erect dwelling at 74 17th St.; one story; frame; cost \$3500.

Ga., Augusta.—J. L. Dodge of Middletown, N. Y., will erect bungalow. (See "Miscellaneous Structures.")

Ga., Waycross.—L. J. Cooper will open bids about May 1 to erect residence; 45x55 feet; frame and brick veneer; steam heat; electric lighting; cost \$10,000; plans by W. B. Camp, Jacksonville, Fla., will be ready by April 15.

La., New Orleans.—John Reiss, 908 Hibernia Bldg., will expend \$4000 to erect dwell-

ing; two stories; ordinary construction; plans and construction by owner. (Recently noted.)

Md., Baltimore.—Joseph Berman, 231 Courtland St., purchased site in Woodberry 788x500 feet, bounded by Woodberry, Maple, Maryland and Central Aves., and will erect number of dwellings; two stories; semi-detached; porch fronts.

Mo., St. Louis.—Plans have been prepared for residences on Forsythe tract for Frank J. Burleigh, George F. Laage, E. J. Bingle, J. J. Quinn, H. J. Knabe, Arthur Greenfield, Arthur Klaas, Wilbur T. Trueblood, Edward J. Ryan and Louis Lockatelle.

Md., Baltimore.—John T. Donohue, 1808 Thames St., has plans by M. R. Stone, 2238 E. Hoffman St., Baltimore, for 37 dwellings on Ellwood Ave. between Pratt and Gough Sts.; two stories; brick; 14x45 feet; cost \$45,000.

Md., Baltimore.—Mrs. Mary Packard and Mrs. Sarah F. Martin have plans by Glidden & Fries, 16 St. Paul St., Baltimore, for residence at Ten Hills, on Edmondson Ave. Ext.; two and a half stories. Contractors estimating are J. Henry Smith, 1426 Light St., and C. W. Brown, both of Baltimore.

Md., Baltimore.—T. Milton Jones, 1504 Light St., purchased site on McCullough St. north of Whitelock St., 640x100 feet, and will erect number of dwellings.

Md., Baltimore.—Charles S. Golding, Lake near Bellona Ave., will erect 10 dwellings on York Rd., near Ravenswood Ave.; two stories; semi-detached; buff brick; marble trimmings; bluestone foundations; cement yards; steam heat; electric lights; cost \$20,000.

Md., Baltimore.—Charles Stump is having plans prepared by C. B. Burdette, 226 Fulton Ave., Baltimore, for store and dwelling at Vine and Smallwood Sts.; two stories; brick; white marble base; plate-glass front.

Md., Baltimore.—William Kleinle, 803 Calvert Bldg., is having plans prepared by John R. Forsythe, 232 St. Paul St., Baltimore, for two cottages on Chatham Rd., Lenox; 2½ stories; 28x80 feet; awarded contract to Charles A. Hughes, 56 E. Woodland St., Baltimore.

Md., Oakland.—C. F. Hammond will expend \$10,000 to erect dwelling; 43x45 feet; mill construction; hot-water heat. (Recently noted.)

Mo., Kansas City.—Roger Davis will erect stucco dwelling at 6011 Brookside; cost \$4500.

Mo., Kansas City.—H. Spelman will erect frame dwelling at 2427-31 Quincy St.; cost \$3900.

Mo., Kansas City.—L. C. Watson will erect dwelling at 6007 Brookside; stucco; cost \$4000.

Mo., Kansas City.—Clarence A. Hartman will erect residence on Lindell Ave.

Mo., Kansas City.—T. R. Graybill will erect residence on 59th St.

Md., Ruxton.—Carl R. McKendrick, 34 United States Fidelity & Guaranty Co. Bldg., Calvert and German Sts., Baltimore, Md., has plans by Emory & Nussear, Professional Bldg., Baltimore, Md., for residence; two and a half stories; stone and stucco; colored tile roof; concrete foundation; verandas on three sides; contractors estimating are Alexander Brown, Boarman Ave., near Garrison Ave.; Charles Brown; John Cowan, 106 W. Madison St.; Gladfelter & Chambers, Parkdale and Maryland Aves.; all of Baltimore, Md.

Mo., St. Louis.—Mrs. Emma Wenzel will erect store and dwelling at 3100 Chippewa St.; two stories; cost \$6500.

Mo., St. Louis.—J. Schnotmeyer will erect two one-story dwellings at 4987-89 Wise St.; cost \$4000.

Mo., St. Louis.—Lindell Fairground will erect three two-story dwellings at 4006-20 Natural Bridge; cost \$12,000.

Mo., St. Louis.—Alphonso Naert will erect two-story dwelling at 6106 Westminster St.; cost \$5000.

Mo., St. Louis.—F. L. Dittmeyer will erect two two-story dwellings at 4202-64 Cot Brillian; cost \$4000.

Mo., St. Louis.—Alphonso Naert will erect five two-story dwellings at 4110 Louisiana St.; cost \$10,500.

N. C., Charlotte.—Brevard Street Methodist Church, Rev. W. O. Goode, pastor, will erect parsonage. (See "Churches.")

N. C., Greensboro.—A. D. Smith will erect residence at Asheboro and East Lee Sts.; cost \$3500.

N. C., Hamlet.—Dr. I. McPhail will erect residence.

N. C., Salisbury.—J. E. Webster will erect residence; cost \$4500 to \$5000.

S. C., Hendersonville.—Sugar Loaf Club

will erect cottages. (See "Miscellaneous Structures.")

S. C., Rock Hill.—W. J. Roddey is having plans prepared by Hook & Rogers, Charlotte, N. C., for residence; 12 rooms; ordinary construction; brick veneer; hot-water or vapor heat.

Tenn., Memphis.—Ed Atchley will erect residence at 1610 Carr Ave.; cost \$4400.

Tenn., Memphis.—W. V. Wooten will erect residences at 1110, 1112 and 1116 Lamar Blvd.; cost \$4500.

Tenn., Memphis.—J. F. Gwinners will erect residence at 1875 Vinton Ave.; cost \$4000.

Tex., Houston.—F. J. Marrett will expend \$6000 to erect dwelling; 30x42 feet; frame; gas and electric lighting; plans and construction by owner. (Recently noted.)

Tex., Houston.—Russell Brown Company will erect two 7-room and one 8-room residences; former in Montrose, latter in James Beale Addition; cost \$19,000.

Tex., Houston.—C. H. Meyers will erect residence; two stories; cost \$5000.

Tex., Houston.—Mrs. S. L. Bastian will erect residence on Travis St.; cost \$5000.

Tex., Nacogdoches.—Louis Muller of Nacogdoches Grocery Co. will erect residence; cost \$3500.

Tex., San Antonio.—Herbert L. Kokernot has plans by H. A. Reuter, San Antonio, for residence; two stories, with laundry, servants' quarters and heating plant in basement; seven-foot stairways; living-room finished with parquetry floors, Rockwood tile mantel 17½x10 feet; reinforced concrete construction; reinforced concrete columns and beams; brick and tile enclosing walls; bedrock foundation; mat glazed green tile roof trimmed with terra-cotta and stone; cost \$50,000.

Tex., San Antonio.—J. Ed Roos has plans by H. A. Reuter, San Antonio, for residence.

Tex., San Antonio.—O. S. Dewees has plans by H. A. Reuter, San Antonio, for residence.

Va., Richmond.—E. Shields will erect detached two-story brick dwelling on Cowardin Ave. between Perry and McDonough Sts.; cost \$3000.

Va., Roanoke.—Max Rosenberg will erect brick-cased dwelling on Clark Ave.; cost \$6000.

Va., Richmond.—C. L. Chappell will erect detached two-story brick dwelling on Stuart Ave. between Sycamore and Rowland Sts.; cost \$6100.

Va., Richmond.—W. J. Gilman will erect three detached two-story brick dwellings on Grace St.; cost \$12,000.

Va., Richmond.—A. J. Warren will erect detached two-story brick dwelling on Main St. between Robinson and Mulberry Sts.; cost \$3000.

W. Va., Warwood.—F. Marion Crawford will erect residence in South Warwood.

GOVERNMENT AND STATE

Fla., Miami—Postoffice, etc.—Treasury Department, office of supervising architect, James Knox Taylor, Washington, D. C. Proposals received at this office until 3 P. M. on April 20, then opened, for construction, complete (including plumbing, gaspiping, heating apparatus, electric conduits, wiring and interior lighting fixtures), of postoffice, courthouse and custom-house at Miami, Fla.; three stories, with basement and unfinished attic; ground area of about 7300 square feet; fireproof construction; stone facing; tile and copper roof. Drawings and specifications may be obtained from custodian of site at Miami, or at this office, at discretion of architect.

Mo., Mexico—Postoffice.—Treasury Department, Office of the Supervising Architect, James Knox Taylor, Washington, D. C. Proposals received in this office until 2 P. M. on April 22, then opened, for construction complete (including plumbing, gas piping, heating apparatus, electric conduits and wiring, and lighting fixtures) of United States Postoffice at Mexico, Mo.; ground area, about 5000 square feet; one story with basement; mezzanine; unfinished attic; fireproof construction; brick and stone facing; tin roof; drawings and specifications may be obtained from custodian of site at Mexico, or at this office, at discretion of supervising architect.

Okla., Tulsa—Postoffice.—Treasury Department, James Knox Taylor, Supervisor of Architect, Washington, D. C., will, it is reported, advertise for bids in April or May to erect proposed Federal building; has \$135,000 appropriation.

S. C., Abbeville—Postoffice.—Treasury Department, Office of Supervising Architect, James Knox Taylor, Washington, D. C. Proposals received until 3 P. M. April 19, then

opened, for construction (including plumbing, gasplugs, heating apparatus, electric conduits and wiring, and interior lighting fixtures) for United States postoffice at Abbeville, S. C., in accordance with drawings and specifications, copies of which may be obtained from custodian of site at Abbeville, S. C., or at this office, at discretion of supervising architect; building two stories; about 3850 square feet ground area; brick-faced with stone trimmings; non-fireproof construction with exception of first floor.

Tenn., Oakdale—Postoffice.—Treasury Department, James Knox Taylor, supervising architect, Washington, D. C., will erect post-office building.

Tex., Austin—Home.—State is reported as considering erection of addition to Confederate Woman's Home; Gen. W. R. Hamby, chairman of board of managers.

Tex., Austin—Insane Asylum.—State Insane Asylum, Dr. John Preston, superintendent, will expend \$4000 to repair roofs. (Recently reported damaged.)

Tex., Corpus Christi—Postoffice.—Treasury Department, James Knox Taylor, supervising architect, Washington, D. C., opened bids to erect postoffice building; N. H. Shields of Danville, Ill., is lowest bidder at \$59,800 for limestone. (Recently noted.)

Tex., McKinney—Postoffice.—Treasury Department, Office of Supervising Architect, James Knox Taylor, Washington, D. C. Proposals received in this office until 3 P. M. April 17, then opened for mechanical equipment (except gas piping and lighting fixtures) of United States Postoffice at McKinney, in accordance with drawings and specifications, copies of which may be obtained at office of superintendent at McKinney or at this office at discretion of supervising architect.

Va., Norfolk—Shellhouse, etc.—Bureau of Yards and Docks, Navy Department, Washington, D. C., opened bids to erect shellhouse and magazine at St. Julien magazine station; W. J. Brent, Norfolk, is lowest bidder at \$30,900 for brick and \$31,648 for tile construction. (Recently noted.)

HOTELS

Ala., Loxley.—Wm. Beiser will erect hotel.

D. C., Washington.—J. H. De Sibour, Hibbs Bldg., Washington, is reported as preparing plans for hotel to replace Corcoran Bldg.

Fla., Daytona.—J. F. Champlain of Ocean House, Watch Hill, R. I., is having plans prepared by S. H. Gove, Daytona, for hotel on S. Ridgewood Ave.; 125 rooms.

Fla., Santa Rosa County.—Smith Sons Lumber Co., incorporated at Pensacola, Fla., by W. T. Smith, Jr., and others, all of Birmingham, Ala., will receive bids to erect two hotels of 16 and 20 rooms and 40 to 50 dwellings for mill employees.

Fla., Tallahassee.—Beverly & Ferris will erect addition to Leon Hotel; three stories; 40 rooms with private baths; steam heat; hot and cold running water in each room; shower baths; telephone system, etc.

Ga., Thomasville.—Masury Hotel Co. will open bids April 30 to remodel three stories of hotel; 210x90 feet; 24 bathrooms; marble wainscoting and tile floors; plans by W. B. Camp, Jacksonville, Fla.; plans ready by April 15.

Md., Baltimore.—Jerome H. Joyce, proprietor of Hotel Joyce, Camden St. opposite Camden Station, is having tentative plans prepared by Theodore Wells Pietsch, American Bldg., Baltimore, for improvements to hotel; seven stories; 76x160 feet; lobby 24x50 feet, etc.

Miss., Hattiesburg.—Ed. Edmondson, manager of Eaton Bldg., will erect two additional stories to building occupied by Hugh Graham; install stairway and equip for hotel.

Mo., Cape Girardeau.—Walter L. Sifer, architect, Cape Girardeau, will receive bids until March 21 for material and labor for erection of five-story reinforced concrete hotel building for George McBride; plans, specifications, etc., at office of architect.

Mo., Kansas City.—J. Russell Mercer of Mercer Jewelry Co. will erect 10-story hotel at 12th and McGee Sts., instead of six-story structure, as recently planned; 45x80 feet. (Recently noted as having plans prepared by Kurkiss & Michaels, Kansas City.)

Mo., Kansas City.—Korfshay Realty Co. will erect hotel at 122-23 Broadway; three stories; brick and stone; cost \$35,000.

Mo., St. Louis.—L. A. Celia, Central National Bank Bldg., will expend \$300,000 to erect fireproof hotel; 57x144 feet; steam heat; freight and passenger elevator; plans by Barnett, Haynes & Barnett, Century Bldg., St. Louis; date of opening bids not determined. (Previously described.)

Tenn., Chattanooga.—Mountain House Co. incorporated with \$5000 capital stock by M. S. Gibson, P. F. Jones, A. Shalliday and others; will erect hotel on Lookout Mountain.

S. C., Greenwood.—Mrs. C. T. Bailey will, it is reported, rebuild hotel; loss \$75,000. (Recently reported burned.)

Tex., Galveston.—W. L. Avery is reported as to erect hotel at Strand and 25th Sts.; four stories; plans in progress; cost \$50,000.

Va., Norfolk.—Hofheimer Bros. have plans by Neff & Thompson, Norfolk, for commercial and hotel building; two stories; lower floor for three stores; upper floor for 22 hotel rooms.

MISCELLANEOUS

Ala., Birmingham—Studios, etc.—W. H. Graves will erect building, portion of which will contain 30 studios for musicians. (See "Stores.")

Ala., Mobile—Stable.—Wilkie Bros. will erect stable on Lee St.; 106x150 feet.

Ark., Argenta—Hospital.—St. Louis, Iron Mountain & Southern Railroad, E. F. Mitchell, chief engineer, St. Louis, Mo., approved plans for proposed emergency hospital; one story; brick; six or seven rooms.

Fla., Lakeland—Auditorium.—Lakeland Auditorium Association organized with \$20,000 capital stock; H. D. Bassett, president; Dr. S. F. Smith, vice-president; L. M. Futch, secretary-treasurer; to promote erection of Chautauqua auditorium.

Ga., Augusta—Racing.—J. L. Dodge of Midtown, N. Y., purchased 107 acres of land and will establish racing plant, providing half-mile track, erect bungalow, etc.

Ky., Winchester—Hospital.—Winchester Hospital Auxiliary Building Association incorporated with \$5000 capital stock by D. B. Hampton, J. D. Simpson, N. H. Witherspoon, Joe L. Brown, Sr., and others; will establish hospital.

La., Alexandria—Clubhouse.—Alexandria Motor Boat Club, Walter U. Varney, president, will probably erect clubhouse.

Mo., St. Louis—Amusement Resort.—Chas. B. Boyd of New York is having plans prepared by Preston J. Bradshaw, 722 Chestnut St., St. Louis, for amusement resort at De Bailleure and McPherson Aves.; will include pavilion to seat 600, cafe, open-air vaudeville garden to seat 2400; German villa style, with sweeping tile roofs, stucco panels, rough brick, etc.; brick fireplaces; upper portion of building half timbered and will project over lower story, which will be of colored stucco; Flemish banquet-room in south wing, with beamed ceiling and walnut wainscoting; leaded casement dining-room window, opening on terraces laid in Welsh quarry tiles; tower with ornamental-iron electric clock; will be known as Alpine Inn; cost \$60,000.

Mo., Springfield—Sanitarium.—Ozark Sanitarium, C. H. Cole, president, has not selected architect to prepare plans for sanitarium; fireproof construction; cost \$150,000; details not arranged. (Recently noted.)

Mo., St. Louis—Bowling Alleys, etc.—Chas. W. Wall is having plans prepared by Milligan & Wray, St. Louis, for commercial building to contain stores, bowling alleys, tailoring establishments, etc. (See "Stores.")

N. C., Charlotte—Fair.—Charlotte Fair Association organized with \$10,000 capital stock by W. S. Orr, C. M. Creswell and others; will acquire site and establish fair.

N. C., Durham—Clubhouse.—Durham County Club plans to erect clubhouse; one and a half stories, with ballroom, kitchen, baths, etc.; veranda and balcony.

Okla., Oklahoma City—Grandstand, etc.—Abner Davis is interested in establishment of baseball park, including erection of grandstand to seat 2500, etc.

S. C., Charleston—Sheds.—Charleston Union Station Co., H. B. Spencer, president, 1300 Pennsylvania Ave. N. W., Washington, D. C., will, it is reported, erect three umbrella sheds, each 300 feet long.

S. C., Hendersonville—Casino.—South Carolina Club will erect casino in connection with club.

S. C., Hendersonville—Clubhouse.—Sugar Loaf Automobile Club will erect clubhouse; three stories; lower floor of stone; will also erect cottages.

Tex., San Antonio—Clubhouse.—Blue Wing Club trustees plan to erect clubhouse, establish fishing and hunting preserve; will sink artesian well, provide lake to cover over 300 acres, construct dam across river and make deep hole to be stocked with game fish.

Tex., Wharton—Hospital.—Dr. G. L. David-son will erect hospital.

Va., Fredericksburg—Dairy Barn and Silos. R. M. Rowe will rebuild dairy barn and two silos reported burned.

Va., Norfolk—Orphanage.—Norfolk Female Orphan Asylum, S. E. Morris, of board of managers, is considering sites for proposed orphanage.

W. Va., Warwood—Car Barn.—Wheeling Traction Co., Wheeling, W. Va., is having plans prepared by A. L. Klieves, Wheeling, W. Va., for car barn. (Recently noted.)

RAILWAY STATIONS

Ky., Somerset—Queen & Crescent Route, C. Dougherty, chief engineer, Cincinnati, O., is reported as to erect depot.

Md., Salisbury.—New York, Philadelphia & Norfolk Railroad, R. V. Massey superintendent, Cape Charles City, Va., will erect terminal station; brick and cement; cost \$25,000.

Miss., Hazlehurst—Illinois Central Railroad, A. S. Baldwin, chief engineer, Chicago, Ill., will, it is reported, remodel waiting and rest rooms, erect 40-foot addition to south end of building, add several hundred feet of additional trackage, etc.

N. C., Hendersonville—Southern Railway, B. Herman, chief engineer, 1300 Pennsylvania Ave. N. W., Washington, D. C., will erect passenger depot; two waiting-rooms double size of present ones; enlarge baggage-room, etc.

N. C., Raleigh—Southern Railway Co., B. Herman, chief engineer, 1300 Pennsylvania Ave., Washington, D. C., will erect freight depot and warehouse; 300x50 feet; shed at end with capacity for 30 cars; building will be of brick; concrete floor; composition roof; cost \$35,000 to \$40,000; construction in 60 days; construction, exclusive of trackage and grading, done by company's force. (Previously noted.)

Tex., Beaumont—St. Louis & San Francisco Railway, F. G. Jonah, chief engineer, St. Louis, Mo., is reported as considering plans for depot.

Tex., Bellville—Gulf, Colorado & Santa Fe Railroad, F. Merritt, chief engineer, Galveston, Tex., is reported as to erect \$14,000 passenger station.

Tex., Galveston—Gulf, Colorado & Santa Fe Railroad, F. Merritt, chief engineer, has appropriation of \$88,000 included in annual budget for station buildings and fixtures. (See "Railway Shops, Terminals, Roundhouses, etc.")

Tex., Hillsboro—Missouri, Kansas & Texas Railway, A. M. Acheson, chief engineer, Dallas, Tex., will, it is reported, erect depot; brick, cement and metal.

Tex., Honey Grove—Texas & Pacific Railroad, B. S. Wathen, chief engineer, Dallas, Tex., is reported as to erect depot.

Tex., Manvel—Gulf, Colorado & Santa Fe Railroad, F. Merritt, chief engineer, Galveston, Tex., is reported as to enlarge depot.

Tex., Pearland—Gulf, Colorado & Santa Fe Railroad, F. Merritt, chief engineer, Galveston, Tex., is reported as to enlarge depot.

Tex., Thompsons—Gulf, Colorado & Santa Fe Railroad, F. Merritt, chief engineer, Galveston, Tex., is reported as to enlarge depot.

Tex., San Antonio—San Antonio, Uvalde & Gulf Railroad, J. E. Franklin, president, will erect station, etc., at Terrell Wells. (See "Railway Shops, Terminals, Roundhouses, etc.")

SCHOOLS

Fla., Magdalene (not a postoffice).—Hillsboro County School Board, Tampa, Fla., will erect school.

Fla., Gary.—Hillsboro County School Board, Tampa, Fla., will erect school; brick.

Fla., St. Augustine—Deaf Institute.—State Board of Control, Tallahassee, Fla., is reported as to call for bids in July to erect schools building and infirmary for State School for Deaf and Blind; cost \$37,500; R. H. Walker, president of school.

Fla., Tampa—Hillsboro county will open bids April 1 to erect grammar school; 70x105 feet; hot-air heat; electric lighting; cost \$30,000; plans by Bonfyre & Elliott, Tampa. (See "Machinery Wanted.")

Ga., Marietta—City will vote May 15 on \$20,000 bond issue for school improvements; D. W. Blair, chairman Board of Education. (Recently noted.)

Ga., Savannah—Board of Education will not erect East Side School (recently noted), but will erect school in South Side; cost \$40,000.

Ky., Louisville—Board of Education will let contract in July or August to erect four and six-room additions to school buildings; ordinary construction; direct steam heating; cost \$29,000; plans by J. E. Henry, 8th and

Chestnut Sts., Louisville. (Recently noted to petition Legislature for authority to vote on \$1,000,000 bond issue for schools.)

La., Baton Rouge—State Board of Education has plans by Stevens & Nelson, New Orleans, La., for high school; two stories and basement; 160x30 feet; six feet below street level; five entrances; basement partitioned to provide separate apartments for girls and boys for domestic science, manual training, etc.; study hall on first floor to accommodate 250 single desks; general laboratory on top floor with amphitheater, lecture-room, etc.; ceilings to provide 220 cubic feet air per pupil; dark red brick construction with wide raked joints; stainless cement trimmings; concrete floor slabs; metal partitions; concrete stairways; cost \$75,000. (Recently noted.)

La., Blanchard—Blanchard Independent School District will vote April 11 on special tax to erect school. Address Caddo Parish School Board.

Miss., Meridian—Meridian Independent School District voted \$25,000 bond issue to erect school. Address District School Trustees.

Mo., Carthage—City contemplates election in spring to vote on \$80,000 to \$100,000 bond issue for schools. Address The Mayor.

Mo., Fulton—Westminster College trustees are reported as considering erection of library, chapel and students' building; cost \$25,000.

Mo., Oak Grove—Oak Grove school district contemplates \$15,000 bond issue to erect school. Address District School Trustees.

N. C., Hickory—City will vote May 1 on bond issue for school building; J. A. Lentz, Mayor. (Recently noted.)

Okla., Ardmore—City has plans by J. B. White, Ardmore, for high school; three stories; 140x177 feet; gray brick, stone and terra-cotta; steel wirework; fireproofing; reinforced concrete; corner beads; gas and electric fixtures; steam heat; plumbing; toilets; cost \$90,000. (Recently noted.)

S. C., Columbia—University of South Carolina will erect proposed auditorium building; cost \$50,000; plans not made; August Kohn, chairman of committee.

S. C., Columbia—Richland County Superintendent of Education will soon award contract to erect proposed Waverly school.

S. C., Eau Claire—Shand & Lafaye, architects, Columbia, S. C., and J. B. Dukes, chairman of committee, will receive bids until March 25 to erect school and for heating apparatus; plans and specifications at office of architects, and may be had on deposit of \$10.

Tenn., Cookeville—Dixie College trustees will erect three-story pressed-brick main building; plans by Wm. B. Ittner, St. Louis, Mo.; also plans to complete boys' dormitory; three stories; brick.

Tenn., Inskip—Knox County Board of Education has plans by L. C. Waters, Knoxville, Tenn., for six-room school building; mill construction; steam heat; cost \$5000. (Recently noted.)

Tex., Algoa—School Board will receive bids until March 25 to erect two-story brick school; certified check for \$100; plans and specifications at offices of secretary of board at Algoa; of architects, Harry W. Shoemaker & Co., 507 Houston Land & Trust Co. Bldg., Houston, Tex., and of J. M. Fendley, county superintendent of schools, at Galveston, Tex., or may be had on deposit of \$10.

Tex., Clarendon—Clarendon Independent School District will vote March 30 on \$25,000 bond issue to erect school. Address District School Trustees.

Tex., Dallas—City has plans for eight-room fireproof Milam school at Fairland. Address The Mayor.

Tex., Dallas—Board of Education will receive bids to erect two fireproof 8-room school buildings; plans and specifications by W. F. Nicol, architect, High School Bldg., Dallas; \$20 deposit required for each set of plans and specifications; bids to be in office of secretary Board of Education on or before March 28, 5 P. M.; certified check for \$500 required; usual rights reserved; C. M. Moore, secretary Board of Education. (Recently noted.)

Tex., Denton—City will vote April 9 on \$2000 bond issue for school improvements; will rebuild portion of North Ward School and install sewerage connection at both ward schools. Address The Mayor.

Tex., El Paso—School Board opened bids to erect wings to high school and erect East El Paso school; J. W. Jackson is lowest bidder for high school improvements at \$22,450 for two wings and \$11,700 for one wing; C. M. Youngberg is lowest bidder for East El

Paso school at \$11,004 for four-room-and-basement structure, with four rooms finished, at \$17,042 for four rooms complete and second story in skeleton, and \$21,000 for four rooms, but building in skeleton, with hall and separate wing. (Recently noted.)

Tex., Flatonia.—City opened bids to erect school; all bids were higher than appropriation, and new plans will be prepared. Address The Mayor.

Tex., Gause.—Gause Independent School District will open bids and let contract in May to erect school building; seven rooms; cost \$10,000; J. W. Adams, secretary of School Board. (Recently noted to vote tax to provide for \$10,000 bond issue.)

Tex., Honey Grove.—City will vote April 12 on \$19,000 bond issue to erect and equip high school. Address The Mayor.

Tex., Houston Heights.—City will vote April 6 on \$75,000 bond issue for school improvements to provide 15 additional rooms. Address The Mayor. (Recently noted.)

Tex., Port Arthur.—Port Arthur independent school district will probably issue \$25,000 of bonds to erect school. Address District School Trustees.

Tex., Prairie View.—Jones & Tabor, architects, 505-506 Binc Bldg., Houston, Tex., will receive bids until March 15 to erect three-story brick dormitory; certified check for 4 per cent. amount of bid; plans and specifications at office of architects.

Tex., Winona.—City voted \$8000 bond issue to erect school; brick. Address The Mayor.

Va., Farmville.—City will erect brick school building; cost \$25,000; plans not determined; H. E. Barrow, Mayor. (Bond issue of \$25,000 recently noted voted.)

Va., Norfolk.—Washington District School Board of Norfolk county will receive bids at office of County Treasurer, Courthouse, for school building near Oakdale; eight rooms; brick; certified check for \$500, payable to T. W. Butt, clerk of board; plans and specifications at office of Lee & Dlehl, architects, 408 Seaboard Bank Bldg., Norfolk, Va., or may be had on deposit of \$25. (Recently noted at Portsmouth, Va.)

W. Va., Benwood.—City will probably rebuild Fifth Ward school on South Marshall St. Address The Mayor. (Recently reported burned.)

W. Va., Ellensburg.—Ellensburg School District will vote April 30 on \$20,000 bond issue to erect high school. Address Board of Education.

W. Va., Kenova.—Ceredo Independent School District will vote March 16 on \$7500 bond issue for additions and equipment for school. Address A. G. Holt, president of Board of Education of said district, Ceredo, W. Va.

W. Va., St. Albans.—St. Albans school district voted \$17,000 bond issue to erect school. Address District School Trustees.

W. Va., White Sulphur Springs.—White Sulphur school district voted \$20,000 bond issue to erect graded high school. Address district school trustees. (Recently noted.)

STORES

Ala., Birmingham.—W. H. Graves will open bids about April 1 to erect mercantile building; to contain four stories; 25x140 feet; four stories and basement; fireproof construction; electric lighting; cost \$75,000; plans by H. B. Wheelock, Birmingham. (Recently noted.)

Ala., Birmingham.—Hillman-Watts Land Co. will erect four one-story frame buildings; cost \$200.

Ala., Birmingham.—W. H. Duey will erect two-story brick veneer building at 29th St. and Juniper Ave.; cost \$4500.

Ala., Birmingham.—R. D. Ashworth will erect one-story frame building at 1430 N. 31st St.; cost \$3000.

Ala., Birmingham.—Birmingham Realty Co. will erect two-story frame building at S. Vina and Cypress Sts.; cost \$3500.

Ala., Birmingham.—J. G. Streit will erect two-story frame buildings on S. Maplewood Ave.; cost \$4000.

Ala., Birmingham.—John W. Caldwell will erect four one-story brick buildings in Avondale at 202 Spring St.; cost \$3000.

Ark., Pocahontas.—Pocahontas Grocery Co. will erect business building; brick.

D. C., Washington.—R. C. Wilkins, Hibbs Bldg., will erect two-story store at 1230 Connecticut Ave. N. W.; cost \$14,000.

D. C., Washington.—F. T. Nesbitt & Co. state that they have no contract to repair building for Mrs. Julia Coxen as recently reported.

Fla., Pensacola.—Hooten & Watson will open bids about April 1 to erect business

building; 80x100 feet; plans by W. C. Frederick. (Recently noted.)

Ga., Atlanta.—J. R. Seawright will erect two brick store buildings; cost \$3500.

Ga., Atlanta.—Wilmer L. Moore is reported as to erect block of stores on Walton St near Cone St. instead of apartment-house as previously planned; cost \$50,000. (William A. Moore Realty Co. previously reported as to erect bachelor apartments on this site.)

Ga., Atlanta.—J. R. Smith and others have plans by J. R. MacEachron, Candler Bldg., Atlanta, for store and warehouse recently noted. (See "Warehouses.")

Ga., Augusta.—J. C. Wingfield will erect store and apartment building; three stories; 98x90 feet; four stores on lower floor and eight seven-room apartments above.

Ga., Quitman.—Z. W. Oglesby will open bids March 25 to erect business building; 30x80 feet; two stories; fireproof construction; electric lighting; cost \$5500; plans by W. B. Camp, Jacksonville, Fla.; plans ready by March 13.

Ky., Louisville.—Varble & Frazier Company has plans by Joseph & Joseph, Louisville, for building; 11 stories; cost \$250,000. Architects wire Manufacturers Record: "Premature; information later."

La., Lake Charles.—F. M. Fuller and associates are reported as considering erection of store and office building. (See "Bank and Office.")

Md., Baltimore.—Charles Stump is having plans prepared by C. B. Burdette, 228 N. Fulton Ave., Baltimore, for store and dwelling.

Md., Baltimore.—Besche Bros., 1041 Light St., will make repairs to store recently reported burned; contracts not let. (See "Machinery Wanted.")

Mo., Alton.—Ancient Free and Accepted Masons will remodel Masonic Temple; ground floor for stores. (See "Association and Fraternal.")

Mo., Kansas City.—T. A. Swearingen will erect brick store at 4719 Troost St.; cost \$3000.

Mo., Kansas City.—C. O. Jones will erect store and apartment-house at 1712-14 E. 10th St.; cost \$9000.

Mo., St. Louis.—Mrs. Emma Wenzel will erect store and dwelling. (See "Dwellings.")

Mo., St. Louis.—Charles W. Wall of Meyer Bros. Drug Co. is having plans prepared by Milligan & Wray, St. Louis, for commercial building at Vandeventer Ave. and Olive St.; six stories; red brick and white terra-cotta; separate heating and lighting plants; site 110x100 feet; lower floor for stores; second floor for ladies' tailoring establishments; four upper floors for offices; eight bowling alleys in basement; cost \$225,000.

Mo., St. Louis.—T. J. O'Loughlin, 806 Chestnut St., will open bids about March 15 to erect two two-story brick store and office buildings; joist construction; cost \$30,000 and \$16,000, respectively; plans by W. F. Sheehan, 300 Chestnut St., St. Louis; will probably let contact to United Building Co.

N. C., Greensboro.—Troxler Bros. will erect store building at Lee and S. Elm Sts.; cost \$5500.

N. C., Hamlet.—E. A. Lackey will erect two store buildings.

S. C., Winnsboro.—R. Y. Turner will erect business building; two stories.

Tenn., Chattanooga.—R. H. Hunt and J. S. Rodriguez will erect store and apartment building. (See "Apartment-houses.")

Tenn., Memphis.—W. W. Watkins of Aberdeen, Miss., will, it is reported, erect building on S. Main St. between Huling and Netleton Aves.

Tenn., Memphis.—Mrs. M. J. Carter will erect addition to building at 1167 Madison Ave.; cost \$16,000.

Tenn., Memphis.—Mrs. M. Von Dohlen will erect two-story brick building at Davis St. and Kingbird.

Tex., Bastrop.—D. G. Petty will erect store building; brick.

Tex., El Paso.—El Paso Gas & Electric Co. will erect office and supply-rooms.

Tex., Fort Worth.—J. J. Parker is reported to have purchased Mulkey Bldg. on Houston St. and as to erect additional story.

Tex., Fort Worth.—W. G. Burton and W. H. Eddleman, both of Burton Dry Goods Co., purchased James Bldg. at 7th and Main Sts. for \$450,000 and will remodel for store; will construct basement, remodel front, reconstruct interior, etc.

Tex., Glen Flora.—William Hood will have plans prepared by Jules Leffland, Victoria, Tex., for store building; 130x55 feet; brick, cement, steel and lumber; open fireplaces; acetylene gas lighting; hand-power elevator; cost \$15,000. (Recently reported burned.)

Tex., Glen Flora.—Hood & Martin will erect store to replace burned structure. (Recently reported burned at loss of \$40,000.)

Tex., Houston.—J. S. and W. M. Rice will erect one-story brick building at Fannin St. and Capitol Ave.; cost \$5500.

Tex., Luling.—T. Wilson, Sr., will erect store building; brick.

Va., Norfolk.—Hofheimer Bros. have plans by Neff & Thompson, Norfolk, for store and hotel building. (See "Hotels.")

Va., Richmond.—C. E. Whittle's Estate will expend \$4000 to repair store on Broad St. between 6th and 7th Sts.

W. Va., Bluefield.—A. L. Woody contemplates erecting no building at present as recently stated.

THEATERS

Ala., Montgomery.—R. S. Maultsby will erect theater at Lawrence and Monroe Sts.; two stories; 36x90 feet; brick; ordinary construction; cost \$4000; plans and construction by owner.

Ark., Clarksville.—E. W. Garrett will rebuild structure to contain bowling alleys, theater and airdome; 30x100 feet; ordinary construction.

Ark., Paragould.—Palace Theater Co. of Chicago, Ill., contemplates, it is reported, erection of branch theater.

Ky., Louisville.—James P. Whalen of Whalen Bros. is reported to erect theater on Jefferson St.

La., Whitecastile.—Paul Blanchard will erect theater to replace Fairyland Theater.

N. C., Winston-Salem.—R. D. Craver of Charlotte, N. C., leased building on North Liberty St.; will erect 50-foot addition, remodel front and equip for motion-picture theater.

Va., Lynchburg.—Trenton Theater, Inc., is having plans prepared by Heard & Cardwell, Lynchburg, for improvements to theater; will increase capacity to 1500, provide U-shaped balcony; six mezzanine boxes to seat 8 or 10; construct apron to stage, etc. (Recently noted.)

WAREHOUSES

Ala., Mobile.—City opened bids to erect steel warehouse on city wharves. Address The Mayor.

Fla., Tampa.—Tampa Furniture Co. will open bids March 15 to erect warehouse; 105x100 feet; ordinary construction; cost \$8000; plans by Bonfoey & Elliott, Tampa. (See "Machinery Wanted.")

Ga., Atlanta.—H. Mendel has plans by Hents & Reid, Candler Bldg., Atlanta, for warehouse; three stories; brick; mill construction; 50x100 feet; tar and gravel roof; electric freight elevator; steam heat; cost \$15,000.

Ga., Atlanta.—J. R. Smith and others have plans by J. R. MacEachron, Candler Bldg.

BUILDING CONTRACTS AWARDED

APARTMENT-HOUSES

Ala., Montgomery.—State Realty Co. incorporated by Brooke Flowers, Leon Well and others awarded contract to erect apartment house at Scott and S. Perry Sts.; three stories; brick; 10 apartments; cost \$50,000.

Mo., St. Louis.—Catherine Investment Co. 702 Chestnut St., awarded contract to A. Winkel, St. Louis, to erect double tenement building; cost \$6000; plans by E. Preisler, 10th and Pine Sts., St. Louis. (Recently noted.)

Tex., Cleburne.—John W. Floore awarded contract at \$13,885 to Godwin & McClesky, Denton, Tex., to erect apartment-house. (Recently noted.)

Tex., El Paso.—S. Urrittia will erect tenement-house at Cotton and 2d Sts.; awarded contract to W. H. Cain, El Paso; cost \$5800.

Tex., Houston.—Carter Lumber Co. awarded contract to R. J. Rochow, Houston, to erect two apartment-houses; double; cost \$5000 each.

Va., Norfolk.—J. W. Cole will expend \$18,000 to erect apartment-house; 70x50x40 feet; mill construction; plans by B. F. Mitchell, Norfolk; contract recently noted awarded to Baker & Brinkley, Norfolk.

ASSOCIATION AND FRATERNAL

N. C., West Raleigh.—Agricultural and Mechanical College awarded contract to S. S. Toler, Rocky Mount, N. C., to erect Young Men's Christian Association building; ordinary construction; selected brick; limestone trimmings; slate and tin roofing; hardwood floors; to include bowling alleys,

Atlanta, for store and warehouse to be occupied by Cotton States Baiting Co.; four stories and basement; 80x170 feet; brick and stone; terra-cotta trimmings; composition roof; electric freight elevator of 4000 pounds capacity; cost \$45,000.

Ga., Moultrie.—Holmes-Hartfield Company will erect warehouse to replace structure reported burned at loss of \$40,000.

Ky., Carlisle.—Burley Tobacco Co., Clarance Lebus, secretary, Lexington, Ky., will erect loose-leaf tobacco warehouse, storage plant and redrying plant.

Ky., Lebanon.—T. M. Estes, W. C. Rogers, J. A. Kelly, E. N. Hundley and R. E. Young are planning to erect loose-leaf tobacco warehouse; will organize company with \$15,000 capital stock.

Ky., Mayfield.—Farmers and Planters' Tobacco Warehouse will erect warehouse; cost \$40,000.

Ky., Paris.—Bourbon Loose-Leaf Tobacco Warehouse Co. incorporated with \$25,000 capital stock; has option on site on Main St., and will erect warehouse with switching facilities; contemplates establishment of drying plant later.

Mo., Kansas City.—Brokers' Office Warehouse Co. has plans by John W. McKecknie, Kansas City, for warehouse and office building; eight stories; reinforced concrete; flood-proof and fireproof; basement floor of reinforced concrete 16 inches thick; side walls of concrete, reinforced and waterproof; automatic pump to operate water and sewer system; cost \$100,000.

N. C., Raleigh.—Carolina Warehouse Co. incorporated with authorized capital stock of \$500,000 by W. B. Gibson, Statesville, N. C.; Dr. J. M. Templeton, Cary, N. C.; J. Z. Green, Nashville, N. C., and others; plans to establish warehouses in various sections of State.

N. C., Raleigh.—Southern Railway Co., B. Herman, chief engineer, 1300 Pennsylvania Ave., Washington, D. C., will erect warehouse, etc. (See "Railway Stations.")

Tenn., East Chattanooga.—Chattanooga Implement & Manufacturing Co., E. H. Sholar, general manager, will erect warehouse; 300x60 feet; three stories; brick; cost \$25,000; materials purchased.

Tex., Brownsville.—Ullman, Steane & Krausse plan to erect warehouse; brick; additional building.

Tex., Cuero.—Moore & Sames will erect proposed warehouse and tanks.

Va., Petersburg.—British-American Tobacco Co., Ltd., New York office at 200 Fifth Ave., will erect tobacco warehouses.

Va., Richmond.—Mrs. Lottie S. Cannon will erect warehouse at 1000 East Cary St.; four stories; brick; cost \$8800.

BANK AND OFFICE

Ala., Birmingham.—Alabama Penny Savings Bank awarded contract to Windham Bros., Birmingham, to erect bank building at 18th St. and 3d Al.; four stories and basement; cost \$40,000; plans by William Leslie Welton, 1209 Empire Bldg., Birmingham. (Previously noted.)

Ala., Birmingham.—American Trust & Savings Bank awarded contract to Realty Construction Co., 211 First National Bank Bldg., Birmingham, for interior finish and bank fixtures; cork flooring; Botticino, white Italian and Tennessee marble; ornamental iron and bronze; Circassian walnut, mahogany and birch woodwork; ceramic mosaic tile; plumbing, heating and electric fixtures and hardware; prices taken in 10 days on all subcontracts; plans not complete; cost \$75,000; William Leslie Welton, Birmingham, and Mowbray & Uffinger, New York, architects. (General contract previously noted awarded to Fred A. Jones Building Co., Dallas, Tex.)

Tex., Dallas.—Guy Sumpter awarded contract to Fred A. Jones Building Co., Dallas,

to erect store and office building. (See "Stores.")

Tex., Stockdale.—First State Bank awarded contract to McNeill & Ezzell of Floresville, Tex., to erect two-story brick building; 25x75 feet; plans by R. L. Pierce, San Antonio, Tex.

CHURCHES

N. C., Hamlet.—Episcopal Church awarded contract to Mr. Mitchell, Hamlet, to erect edifice. Address The Rector, Episcopal Church.

Tenn., Lebanon.—Baptist congregation, Rev. J. W. Stallings, pastor, awarded contract to Roscoe Faulkner, Lebanon, to remodel edifice; will remove present front, extend auditorium, construct two towers; memorial windows; slanting floor; two additional classrooms in rear of pulpit, 16x20 feet; new choir gallery; pool; heating plant in basement; plans by Thomas Chamberlain. (Recently noted.)

Tenn., Union City.—Christian Church awarded contract to Hubbard & Co., McKenzie, Tenn., to erect edifice.

Tenn., Whiteville.—Baptist church awarded contract to E. M. Weems, Somerville, Tenn., to erect edifice; 8 or 10 rooms, with baptistry and Sunday-school department; cost \$7,000.

Tex., Pecos.—First Methodist Episcopal Church, T. B. Pruitt, chairman of building committee, awarded contract to erect edifice; concrete and brick; eight Sunday-school rooms, etc.; cost \$22,500. (Recently noted.)

CITY AND COUNTY

Ala., Huntsville—Jail.—Madison county awarded contract to Van Dorne Iron Works Co., Cleveland, O., for alterations and additions to jail; fireproof; steam heat; conduit system of wiring; cost \$14,000; plans by Frederick Ausfield, Montgomery, Ala. (Recently noted.)

Ky., Carlisle—City Hall.—City awarded contract to Elliott Collier, Carlisle, to erect city hall; pressed brick; Bedford stone trimmings; 45x80 feet; hot-water heat; electric lighting; hand-power elevator; cost \$14,000; plans by E. Stampler; heating, lighting and steel ceiling reserved by city. (Previously noted. See "Machinery Wanted.")

COURTHOUSES

Mo., Princeton.—Mercer County Commissioners awarded contract to John E. Anderson, 713 Lafayette Ave., Kansas City, Mo., to erect courthouse; plans by Sonnenman & Van Trump, 519-21 Reserve Bank Bldg., Kansas City. (Recently noted.)

DWELLINGS

D. C., Washington.—Miss Margaret S. E. Cameron will expend \$5,000 to erect dwelling and garage; 40x30 feet; ordinary construction; plans by J. H. de Sibour, Hibbs Bldg., Washington; contract recently noted awarded to W. P. Lipscomb & Co., 1405 F St. N. W., Washington.

D. C., Washington.—Denis McCarty awarded contract to R. Z. Hazell, 426 16th St. S. E., Washington, to erect dwellings at 700, 702 and 710 Irving St. N. W. and 3034-36 Georgia Ave. N. W.; two stories; cost \$2,000; plans by A. B. Mullett & Co., Union Trust Bldg., Washington.

Fla., Tarpon Springs.—Eugene Holtsinger, Tampa, Fla., awarded contract to C. F. Aulick, Tampa, Fla., to erect residence; two stories; brick; 32x40 feet; cost \$5,000.

Ga., Atlanta.—C. W. Pope awarded contract to D. B. Grist, 44 Inman Bldg., Atlanta, to erect proposed dwelling; one story; frame; cost \$3700.

Ga., Atlanta.—J. S. Fleet, 25 Peachtree Pl., awarded contract to J. A. Apperson & Co., Empire Life Bldg., Atlanta, to erect two-story frame residence; cost \$5,500.

Ga., Atlanta.—C. R. Haskins awarded contract to C. L. Adams & Co., 319 Peters Bldg., Atlanta, to erect two one-story frame dwellings; cost \$4,000.

Ga., Atlanta.—Marshall Johnson awarded contract to Blankston & Stewart, 301 Empire Bldg., Atlanta, to erect two-story frame dwelling; cost \$5,500.

Ga., Savannah.—J. E. Willink will expend \$8,000 to erect dwelling; two stories; frame; cost of heating plant, \$800; plans by H. W. Witcover, Savannah; contract recently noted awarded to A. L. Wimbish, Savannah.

Ga., Savannah.—W. N. Pratt awarded contract to G. A. Schwaab, Savannah, to erect bungalow in Vernon View; broad weatherboarding; six rooms; outbuilding and garage; 12-foot piazza across front.

Ga., Savannah.—R. L. Mercer awarded contract to G. A. Schwab, Savannah, to erect

bungalow in Vernon View; shingle roof and sides; kitchen, servants' quarters and garage in rear.

Ga., Waycross.—Waycross Construction Co. has contract to erect 52 dwellings in Deenwood; average cost, \$1,000; materials ordered; houses to have concrete foundations; plaster board instead of lath; D. S. Schureman, architect, in charge of construction.

Md., Catonsville.—John A. Sinclair of Baltimore, Md., awarded contract to R. G. Diehmann, Edmondson and Dutton Aves., Catonsville, to erect cottage on Edmondson Ave. Ext.; two stories and attic.

N. C., Hamlet.—W. L. Robinson awarded contract to erect dwelling.

Tenn., Bay City.—G. R. Keller awarded contract to O. E. Hattchett to erect residence; eight rooms and bath; two porches; fireproof construction; fireplaces and stoves; electric lighting; plans by J. C. Large. (Recently noted.)

Va., Danville.—Frank Talbott awarded contract to H. T. Pearson to erect frame dwelling; eight rooms and baths; hot-water heat; cost \$6,000; plans by C. G. Pettit, Danville. (Recently noted.)

Va., Norfolk.—George W. Banks awarded contract to John Kelbaugh, Norfolk, to erect two frame residences on 18th St.; cost \$4,500.

GOVERNMENT AND STATE

La., Algiers, Station A, New Orleans—Immigration Station.—Samuel E. Redfern, Commissioner of Immigration, awarded contract at \$95,000 to erect immigration station, and at \$8900 additional for residence to John Reiss, Hibernia Bldg., New Orleans; plans by DeBuys, Churchill & Labouisse, New Orleans. (Recently noted.)

HOTELS

Ala., Huntsville.—McGee Hotel Co. awarded contract to erect addition to McGee Hotel; 20 rooms.

Ala., Loxley.—Orrie Stapleton awarded contract to Mr. Peterson to erect hotel; 15 rooms.

Ark., Jonesboro.—Tom Warner, proprietor of Warner Hotel, awarded contract to Henry Leimaster, Jonesboro, to remodel lobby, office and dining-room; cost \$5000.

Tenn., Memphis.—A. L. Hach will expend \$22,000 to erect hotel and store building; 50x120 feet; ordinary construction; hot-water heat; plans by Hanner & Cairns, Schmidt Bldg., Memphis; contract recently noted awarded to Ozanne & Hinson, Builders' Exchange, Memphis.

MISCELLANEOUS

Ala., Cullman—Studio.—L. J. Waggoner awarded contract to erect studio; cost \$6,000.

Md., Baltimore—Clubhouse.—Baltimore Yacht Club, Isaac Emerson, commodore, Hotel Emerson, Baltimore and Calvert Sts., awarded contract to McLean Contracting Co., Maryland Trust Bldg., Baltimore, to erect clubhouse; plans by Joseph Evans Sperry, 409 Calvert Bldg., Baltimore. (Recently noted.)

Mo., St. Louis—Restaurant.—Universal Lunch Co., Charles H. Nelson, president, leased building at 918 Olive St. and will expend \$10,000 for improvements to include new front, marble tables and wainscoting, mirrors in walls and ceilings, etc.; awarded contract to G. A. Spies Art Glass Co. for interior work.

S. C., Columbia—Car Barn.—Columbia Railway, Gas & Electric Co. has plans by and awarded contract to J. G. White & Co., 43 Exchange Pl., New York, to erect car barn; 115x300 feet; fireproof; steel and brick; cost \$71,000. (Recently noted.)

Va., Richmond—Baseball Park.—United States League Club awarded contract to P. J. White & Son, Richmond, to construct baseball park; grandstand 28x80 feet; mill construction; cost \$6,500. (Recently noted.)

Ala., Bay Minette.—Cassius M. Proctor and Charles C. Hand are quoted saying that they are contemplating the construction of a railway to operate with gas-electric cars from Pensacola to some point on Mobile Bay opposite Mobile, about 50 miles. Address, Bay Minette, Ala.

Ala., Birmingham.—The Jemison Traction Co. of Birmingham, capital \$5000, is chartered. Incorporators: A. L. Jemison, G. N. Smallridge and H. A. Burns.

Ala., Birmingham.—The Louisville & Nashville Railroad Co. says it is not contemplated to make any improvements at 17th St. and Railroad Ave. in Birmingham at present. This refers to a recent press report.

Ala., Manchester.—The extension of railroad by the Manchester Lumber Co. appears to be that of the Alabama Central Railroad, now running from Jasper to Manchester and which is extending from Manchester to Henry Patton, seven miles. W. Ed. Hall of Jasper, Ala., has the contract. The bridging consists of five wooden trestles. E. M. Barton is president, Albert Russell vice-president and general manager, and L. C. Britton chief engineer.

Ala., Tuscaloosa.—The Vance Construction Co. is reported to have completed its contract on the Tuscaloosa Mineral Railway and will remove its steam-shovel outfit to Birmingham.

In writing to parties mentioned in this department, it will be of advantage to all concerned if the Manufacturers Record is mentioned.

La., Natchitoches.—State Normal School trustees have plans by Stevens & Nelson, New Orleans, La., for dairy barn; reinforced concrete; fireproof; stalls of steel pipes; metal feed bins; solid concrete flooring with gutters to permit flushing; 50x127 feet; accommodations for 50 cows; construction to permit erection of wing to accommodate 50 additional cows; asbestos roof; metal windows; frame doors; white enamel walls; overhead tracks for conveying milk cans, feed, etc.; contract awarded.

Tex., Stockdale.—J. J. Sutton awarded contract to McNeill & Ezzell, Floresville, Tex., to erect store; one story; brick; 25x105 feet; plans by R. L. Pierce, San Antonio, Tex.

Tenn., Taylor.—C. P. Vance awarded contract to Evans & Lee, Taylor, to erect proposed addition to Forwood Company's store at 2d and Tolbott Sts.; cost \$8,000 to \$10,000.

Va., Danville.—Patton, Temple & Williamson awarded contract to Harwood & Moss, Danville, to erect store and office building; 54x10 feet; two stories; mill construction; cost \$18,000; plans by C. G. Petit, Danville. (Recently noted.)

Va., Richmond.—Joseph Lichtenstein will erect two stores on Main St.; brick; two stories; ordinary construction; furnace; gas and electric lighting; cost \$8,000; plans by A. F. Hunt; contract awarded to Fox & Sons.

Va., Roanoke.—Maddox & Jennings awarded contract on percentage basis to erect brick business building; 50x100 feet; cost \$3,000. (Recently noted.)

W. Va., Athens.—William A. Cooper & Co. have plans by and awarded contract to E. F. Cooper, Athens, to rebuild burned store occupied by J. M. Cook; 30x60 feet; two stories and basement; mill construction; heating not determined; cost \$3,000. (See "Machinery Wanted.")

THEATERS

Fla., St. Petersburg.—George S. Gandy awarded contract to Frank E. Estes, St. Petersburg, to erect theater; 100x160 feet; covered entrance, 100-foot approach; electric or direct-steam heat; electric lighting; cost \$75,000 to \$90,000; plans by Bonnwell & Sons, St. Petersburg, Fla. (See "Machinery Wanted.")

Ga., Fitzgerald.—H. A. Burkhart has plans by and awarded contract to J. D. Wash, Fitzgerald, to erect opera-house; 70x100 feet; stage 20x70 feet; seating capacity 1000. (Recently noted.)

Ky., Paris.—Colonial Amusement Co., Lexington, Ky., will erect theater; 25x35 feet; brick; furnace; electric lighting; cost \$700; plans by Rowe & Janani, Lexington, Ky.; contract awarded to Minter & Son, Paris.

WAREHOUSES

D. C., Washington.—Christian Heurich, 25th, 26th, D and Water Sts. N. W., has plans by A. P. Clark, Jr., 816 14th St. N. W., Washington, for warehouse on New Hampshire Ave., near M St.; three stories; brick; cost \$30,000; awarded contract to Boyer Smith, 214 14th St. N. W., Washington.

Tex., Houston.—H. Waddell awarded contract to Street & Born, Houston, to erect warehouse; 100x225 feet; four stories; mill or slow-burning construction; freight elevators; plans by C. D. Hill & Co., Houston.

Va., Norfolk.—Lyon & Greenleaf have plans by Lee & Diehl, Norfolk, for proposed warehouse at Tazewell and Duke Sts.; 8x101 feet; one story; brick; electric lighting; cost \$519; contract awarded to J. H. Pierce, 505 Seaboard Bank Bldg., Norfolk.

RAILROAD CONSTRUCTION

RAILWAYS

Ark., Batesville.—V. Y. Cook, president of the Batesville & Northeastern Railway Co., says it is hoped to obtain charter immediately. Line will be about 60 miles long.

Ark., Monte Ne.—George D. Locke, president of the Ozark Land & Lumber Co., Rogers, Ark., says that it will build 5 miles of railroad from Monte Ne, on the Kansas City & Memphis Railway, to its timber tract east of there.

Ark., Portland.—The Portland & Southeastern Railroad Co. is reported surveying for a line from Portland, Ark., to Lake Providence, La., about 35 miles. J. G. Grossheim is superintendent at Portland, Ark. E. S. Price is chief engineer at St. Louis, Mo.

Fla., St. Petersburg.—The Florida Association, A. B. Davis, general manager, with offices at St. Petersburg, Fla., and 1815-17 Arch St., Philadelphia, Pa., plans to build a suburban railway to connect its properties at Pinellas Park with St. Petersburg.

Ga., Cary.—The Cary North & South Railroad Co. has been granted charter amendments to make the proposed extension to Toombsboro, Milledgeville and Sandersville. (See Manufacturers Record, January 25.)

Ga., Columbus.—Charter has been asked for the Columbus, Chattanooga & Gulf Railway Co., capital \$300,000, to build a line about 10 miles long from Georgetown, Ga., via Columbus and other points to Atlanta, Ga., following the valley of the Chattahoochee.

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River. Headquarters at Columbus, Ga. Incorporators, Josiah Flournoy, J. Johnson Williams, L. H. Chappell, Arthur Bussey, P. J. Williams, L. F. Humber, Henry R. Goethius, T. T. Miller and E. P. Owlesley of Muscogee county, of which Columbus is the county-seat, and John D. Little of Fulton county, in which Atlanta is located.

Ga., Rising Fawn.—Engineers for the Louisville & Nashville Railroad are reported surveying for a line from Gadsden to Chattanooga. J. E. Willoughby, chief engineer of construction, Louisville, Ky., may be able to give information.

Ky., Greenville.—J. A. Rose, electrical engineer of the Greenville Light & Water Co., is reported working on a plan for the construction of an electric railway from Greenville via Central City to the Green River, about 10 miles. It would touch seven mining towns.

Ky., Henderson.—The Evansville, Henderson & Owensboro Traction Co. is reported granted a franchise by the City Council of Henderson. W. A. Carson, Evansville, Ind., may give information.

Ky., Prestonsburg.—The Long Fork Railway Co., capital \$10,000, Prestonsburg, has been chartered to build a line about 20 miles long in Floyd, Pike and Knott counties. Incorporators: James Salisbury, B. F. Combs, M. Flanigan and W. P. McVay.

La., Clinton.—The Clinton & Birmingham Railroad Co. is reported to have filed its charter to build a line from Clinton to Greenwell Springs and thence to a connection with the railroad of the Louisiana Railway & Navigation Co., perhaps at Edenboro, about 40 miles from Clinton. Directors are A. J. Kerfoot, Isadore Mayer, George A. Hero, W. D. Barksdale, I. N. Parr, George J. Rely and Walker B. Spencer. An election is called for April 10 to vote on proposed aid for the line.

La., New Iberia.—The New Iberia, Lafayette & Northwestern Railway Co. is reported making preliminary surveys from New Iberia to Eunice, La., 53 miles. F. M. Welch is president and H. A. Genung chief engineer, both at New Iberia, La.

La., New Orleans.—E. W. Burgis, superintendent New Orleans Southern & Grand Isle Railway, says there is nothing to report at present concerning the acquisition of the Algiers Railway & Light Co. and the extension of its lines to the New Orleans Southern.

Miss., Natchez.—J. L. Hegeman and William Cornell of Meridian, Miss., are reported promoting the proposed Natchez & Eastern Railroad, and the former is quoted saying that the Knickerbocker Trust Co. of New York, the State Street Trust Co. of Boston and the Wilmington Trust Co. of Wilmington, Del., have \$4,000,000 subscribed for construction. Application is being made at Natchez for right of way.

Mo., St. Louis.—An official letter says that the proposed second track construction of the Wabash Railroad will include work all over the system as well as in Missouri. Date for receiving bids not set. A. O. Cunningham, St. Louis, is chief engineer.

N. C., Elkin.—John A. Mills of Raleigh, N. C., general manager of the Elkin & Alleghany Railroad, is reported saying that he proposes to extend the line to Mountain City, Tenn., making it about 75 miles long.

N. C., Fayetteville.—The Aberdeen & Rockfish Railroad is reported obtaining right of way for an extension to Fayetteville. John Blue is president and general manager at Aberdeen, N. C.

N. C., High Point.—Edward W. Shedd, chief engineer, Randolph & Cumberland Railway, is quoted saying that survey is proposed from High Point to Yadkinville as soon as weather permits. Address: Carthage, North Carolina.

N. C., Kinston.—The Kinston Terminal Co. is reported planning construction of a railroad from Kinston to Richlands, N. C., about 20 miles. R. C. Strong and others are appointed a committee on stock subscriptions.

N. C., Mount Airy.—The Mount Airy & Eastern Railroad Co., according to a local report, will make considerable improvements as soon as weather permits. J. T. Heare is general manager.

N. C., Raleigh.—The Southern Railway, says a letter, proposed to build additional yard trackage at Raleigh. B. Herman is chief engineer maintenance of way at Washington, D. C.

N. C., Winston-Salem.—Broadway township is reported to have voted \$30,000 of bonds to aid construction of the Randolph & Cumberland Railroad, for which Winston-Salem voted bonds some time ago. E. W. Shedd is chief engineer at Carthage, N. C.

Okla., Bartlesville.—The Bartlesville Interurban Railway Co. proposes to build a line from Dewey, Okla., near Bartlesville, to Cane, Kans., 18 miles, via Copan. Preliminary survey is made and two 90-ton bridges will be needed. Route level. J. J. Curl is president; Geo. B. Keeler, vice-president; H. Askin, general manager, W. A. Smith, treasurer; F. M. Overeers, secretary, and Dee Steele, chief engineer at Bartlesville, Okla.

Okla., Chattanooga.—Reported that survey is being made for a railroad from Chattanooga, Okla., to Electra, Tex., about 30 miles. The Board of Trade may be able to give information.

Okla., Lawton.—Jacob L. Hamon, president of the Ardmore, Duncan & Lawton Railway Co., is quoted saying that construction of the proposed line will begin about May 1. E. R. Sutton of Philadelphia, promoter of the enterprise, and A. N. Bullitt, chief engineer, are reported about to go over the route.

Okla., Lawton.—W. B. McKinley of Champaign, Ill., and others are reported to have bought the Comanche light and power plant and the Lawton & Fort Sill Electric Railway, and will complete the line.

Okla., Muskogee.—J. H. Johnston, assistant to the president, Missouri, Oklahoma & Gulf Railroad, is quoted saying that contracts will be awarded about April 1 for the construction of the extension from Henryetta to Oklahoma City, about 102 miles. J. J. Harrison is chief engineer at Muskogee, Okla.

S. C., Charleston.—The Charleston Terminal Co., W. E. Huger, president, will, it is reported, add two tracks to the union passenger station.

S. C., Columbia.—J. Davis Powell, general contractor, Columbia, advises that he has just been awarded another contract by the Southern Railway for the construction of freight and storage yards (six tracks about a mile long) at Royster, two miles south of Columbia. Work is under way. He has about completed his work at Belton, S. C., for the Greenville, Spartanburg & Anderson Interurban, grading of terminal site, yards and connecting tracks.

Tenn., Chattanooga.—Application is reported made to charter the East Tennessee Traction Co. to build a line from Chattanooga to Cleveland, Tenn., about 25 miles; capital \$100,000; incorporators, J. W. Adams, George B. Adams, William L. Frisner, B. C. Roper and Lewis M. Coleman of Chattanooga.

Tenn., Chattanooga.—The Chattanooga Traction Co., in which C. E. James and others are interested, is reported to be pushing construction on its line to the summit of Walden's Ridge.

Tex., Caldwell.—The Houston & Texas Central Railroad is reported to have awarded contract to the Morey-Faulhaber Construction Co., Chemical Bldg., St. Louis, Mo., and Caldwell, Tex., for five miles of work on its new line out of Caldwell.

Tex., Del Rio.—Surveys are reported complete for the proposed bridge over the Rio Grande to be erected by the Kansas City, Mexico & Orient Railway and the National Railways of Mexico. W. W. Colpitts, Kansas City, Mo., is chief engineer of the Kansas City, Mexico & Orient.

Tex., Fort Worth.—G. H. Clifford, vice-president and general manager of the Northern Texas Traction Co., is quoted saying that between \$50,000 and \$100,000 will be spent this year for second track between Fort Worth and Handley.

Tex., Fort Worth.—J. A. Stafford, traffic manager of the Fort Worth Stockyards Co., whose name was recently mentioned in connection with a plan to build a railroad from Fort Worth northwest, says that the proposition has not yet taken sufficient form to make any announcement.

Tex., Fort Worth.—W. E. Brown, mentioned as representing the Mercantile Trust Co. of St. Louis, in Texas, is quoted saying that the proposed railroad from Fort Worth to Mineral Wells, Tex., 64 miles, is assured and will be built within a year. Charter has been obtained.

Tex., Greenville.—Charter has been filed for the Eastern Texas Traction Co. to build interurban railways, altogether nearly 200 miles long, to connect Greenville, Dallas, Wolfe City and other places; capital \$2,000,000; incorporators, Joseph F. Nichols and W. A. Williams of Greenville and J. W. Crotty of Dallas, Tex. Mr. Crotty is quoted saying that construction is assured, and will begin within three months.

Tex., Hearne.—The Hearne & Brazos Valley Railroad Co. is reported pushing construction on its extension to Giddings. J. W. Green is vice-president and general manager. E. W. Shedd is chief engineer at Carthage, N. C.

Tex., Robert Lee.—A bonus of \$50,000 is reported being offered by Robert Lee for a railroad connection with the Texas & Pacific and the Santa Fe.

Tex., San Angelo.—Hert Austin, agent for the American Construction Co., is reported to have made a proposition to the San Angelo Chamber of Commerce looking to the construction of a railroad from San Angelo to Kerrville, Tex., about 125 miles.

Tex., San Antonio.—W. G. Van Vleck, vice-president Galveston, Harrisburg & San Antonio Railway, Houston, says that the improvement at San Antonio will not be an extension, but only an addition of 3358 feet of tracks to the present yards.

Tex., San Antonio.—The Chamber of Commerce is reported to have accepted the proposition of R. A. Love to build a railroad from San Antonio to Fredericksburg, Tex. The line must be completed within 18 months.

Tex., Newton.—The Frisco lines, says a report, are surveying for an extension from the Orange & Northwestern line at Newton to Hemphill, Tex., about 25 miles. F. G. Jonah, St. Louis, Mo., is chief engineer.

Tex., Seguin.—The Guadalupe Water Power Co. of Seguin, Tex., has filed charter with \$600,000 capital. It will, among other things, result in the construction of an interurban electric railway connecting San Antonio, Seguin, New Braunfels and possibly Lockhart and Austin. Incorporators and directors are W. B. Dunlap of Beaumont, Tex.; E. W. Brown of Orange, Tex., and J. M. Abbott of Seguin, Tex. Others mentioned as interested are F. C. Weinert of Seguin and Walter J. Crawford of Beaumont.

Tex., Stamford.—P. G. Burns, chief engineer of the proposed Stamford & Eastern Railroad, is quoted saying that contracts for grading have been closed with J. T. Hughes of Dallas, Tex., and Brown & Ashburn of Mineral Wells and Comanche, Tex., for the line to Fort Worth, about 150 miles.

Tex., Doswell.—The Northern Neck Construction Co., a New York corporation, has filed its charter in Virginia and will build the Richmond, Washington & Chesapeake Railway from Doswell to Freeport, Va., 82 miles. E. A. Cannell, Tappahannock, Va., is statutory agent; Walter Fairchild of New York is president. Construction is to begin immediately. Channing M. Ward, Richmond, Va., is president of the railway, and

Charles W. Luck, Tappahannock, secretary. (See Manufacturers Record February 22.)

W. Va., Weston.—The Fairmont & Clarksburg Traction Co. is reported asking bids until April 1 for its proposed line from Weston to Clarksburg, 16 miles. J. A. Watson, Fairmont, W. Va., is general manager; J. P. Wigginton is chief engineer.

STREET RAILWAYS

Ala., Gadsden.—The City Council has granted a franchise to Lou Hart and associates for the proposed street railway to the summit of Lookout Mountain and Black Creek Falls, with a branch to a point south of Gadsden steel plant. Line must be in operation within a year, but Mr. Hart is reported saying that it will be ready by July.

La., New Orleans.—The New Orleans Railway & Light Co., according to a report quoting President Hugh McCloskey, will fill in the right of way and raise the tracks at a point near Lakeview Park.

Miss., Hattiesburg.—The Hattiesburg Traction Co. will, it is announced, build an extension of the Fourth Street line.

Mo., St. Louis.—President David P. Leahy of the St. Louis & Jennings Railway Co. is reported saying that the Jennings line will be extended three or four miles.

N. C., Greensboro.—The North Carolina Public Service Co. contemplates an extension out E. Market St. C. H. Andrews is manager, Bird S. Coler of New York is president, and J. P. Clark of Columbia, S. C., general manager.

Okla., Tulsa.—C. H. Bosler, president of the Tulsa Street Railway Co., is quoted saying that a mile of second track will be built on Main St. from Cameron St. to South 9th St.

S. C., Florence.—N. Gaillard Walker of Rock Hill, S. C., is reported to have made a proposition to the Florence Chamber of Commerce to build a street railway.

Tenn., Memphis.—The Memphis Street Railway Co. is reported planning to build several extensions and loops. T. H. Tutwiler is president and general manager.

Va., Lynchburg.—The Lynchburg Traction & Light Co. contemplates building an extension and some second track.

MACHINERY, PROPOSALS AND SUPPLIES WANTED

Manufacturers and others in need of machinery or supplies of any kind are requested to consult our advertising columns, and if they cannot find just what they wish, if they will send us particulars as to the kind of machinery or supplies needed we will make their wants known free of cost, and in this way secure the attention of manufacturers and dealers throughout the country. The Manufacturers Record has received during the week the following particulars as to machinery and supplies wanted.

Addressing Machines, etc.—U. S. Department of Agriculture, office of Secretary, Washington, D. C. Proposals will be received at office of disbursing clerk until 2 P. M. March 26 for furnishing Department of Agriculture one addressing machine, one sealing machine, 200,000 blank stencils and about 600 metal trays. Proposals will also be received until 2 P. M. April 5 for furnishing department one turbo-generator set. Full information furnished on application to disbursing clerk. James Wilson, Secretary.

Anchor Bolts, etc.—Proposals received at office of General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10 A. M. March 25, then opened, for furnishing steel anchor bolts, steel cable, blacksmiths' punches, hammers, hammer handles, oilers, mop heads, hose, packing, emery cloth, steel tapes, carbon paper, contour paper, clips, twine, index cards, bond paper, white zinc, Japan drier, shellac, chrome yellow, sienna and umber. Blanks and general information relating to this circular (No. 691) may be obtained from this office or offices of assistant purchasing agents, 24 State St., New York, and 614 Whitney-Central Bldg., New Orleans; also from U. S. Engineer offices in Baltimore, Philadelphia, Pittsburgh, Boston, Buffalo, Cleveland, Cincinnati, Chicago, St. Louis, Detroit, Milwaukee, St. Paul, Chattanooga, Louisville, Mobile and Galveston; Commercial Club, Kansas City, and Chamber of Commerce, Quincy. F. C. Boggs, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

Automobiles.—Box 559, Cincinnati, O., wants seven-bench open motor cars; good order and cheap for resale; give full description.

Automobiles, etc.—W. T. Weaver, Box

325, Gulfport, Miss., wants to correspond with manufacturers of automobiles, quick delivery wagons and motor-cycles; view to agency.

Bag Machinery.—Allgood Hosiery Mills Co., Vaughan, N. C., wants addresses of makers of machinery for manufacturing flour and meal bags; also of machinery to print on the bags.

Bank Fixtures.—Guarantee State Bank, Mertens, Tex., wants prices on bank fixtures.

Bank Fixtures.—J. S. Earle, Woodward, Okla., wants prices on fixtures for bank at Laverne, Okla.; later will want vault.

Barrels.—Norway Produce Corporation, 201 Woodward Bldg., Birmingham, Ala., wants addresses of manufacturers of or dealers in barrels suitable for packing mackerel.

Boiler.—O. R. Whitney, 30 Cortland St., New York, wants 40 to 50-horse-power second-hand submerged tube vertical boiler, 100 pounds steam; prompt delivery.

Boiler.—American Box Co., Box 165, Lynchburg, Va., wants prices on 100-horse-power return-tubular boiler, 125 pounds pressure; guaranteed inspection; prices f. o. b. Lynchburg.

Boilers.—R. E. Burris, Anderson, S. C., wants prices on boilers.

Boilers.—J. W. Seaver, Jr., chief engineer Southern Assembly, Waynesboro, N. C., wants second-hand 50-horse-power boiler; also 10-horse-power boiler. Give details and price.

Bolts.—Yadkin Valley Mill & Lumber Co., Ronda, N. C., wants prices on bolts one-half inch to five-eighths inch long.

Belts.—Herman Dullere, Saventhem, Belgium, wants (with view to agency) prices on belts.

Brassworking Machinery, etc.—Chas. R. Passavant, Box 574, Newnan, Ga., wants data and prices on corrugated seamless sheet brass of special shape and machinery for manufacturing it.

Bucket.—J. W. Seaver, Jr., chief engineer Southern Assembly, Waynesville, N. C., wants second-hand orange-peel bucket; one yard or less. Give details and price.

Brewing Machinery.—Southern Ginger Beer Co. (T. B. Norris to be addressed), Candler Bldg., Atlanta, Ga., wants prices on machinery for ginger beer; capacity 3000 dozen bottles ginger beer per week.

Brick.—Herman Dullere, Saventhem, Belgium, wants, with view to agency, prices on enameled brick of various colors.

Brick.—Empire Construction Co., Room 11 Union Bank Bldg., Douglas, Ga., wants common brick.

Bridge.—George F. Parramore, Cape Charles, Va., wants prices on lift draw 9 feet wide and 23½ feet long.

Bridges.—Board of Supervisors, Batesville, Miss., will receive bids April 1 at courthouse for constructing three steel bridges; plans and specifications on file at office of Chancery Clerk, R. W. Draper.

Building Materials.—Kern & Adams, 813 Forsyth Bldg., Atlanta, Ga., want catalogues and samples of building materials of interest to architects.

Building Materials.—Presbyterian Church, R. F. Carson, secretary, Huntington, W. Va., wants prices on brick, slate roof, art glass, etc.

Building Materials, etc.—Elliott Collier, Carlisle, Ky., wants prices on Bedford stone, slate, mill work, 350,000 feet of yellow pine dimension and boxing, 8x8, 2x12x16-22-26, 3x10x16, 8x12x18-22-26, 4x1x4, 13-16x10x12 D. 2 S.; also 218 skylights, 4x4 flats.

Building Materials, etc.—Bonniwell & Son, St. Petersburg, Fla., wants prices on structural steel (list ready 11th of March), reinforcing material, metal lathe, fireproof doors and windows, fireproof paints, sprinkler system, electric (water) pumps, electrical equipment, etc.

Building Materials.—R. E. Burriss, Anderson, S. C., wants prices on building materials.

Building Materials.—Jordan-Munn Construction Co., Greenville, S. C., wants prices on pressed brick, plate glass, tile prism glass, metal store front and steel beams and columns.

Building Materials.—Bank of Bloomfield, Bloomfield, Mo., wants prices on building materials for \$15,000 bank and office building.

Building Materials.—A. B. Nicholson & Co., Graham, N. C., want prices f. o. b. cars Troy, N. C., on brick, iron and steel work, shop work, windows, doors, etc., for school building at Troy.

Building Materials.—Fred Beatty, Lowell, Miss., wants catalogues and other data of interest to architects.

Canning Machinery, etc.—Emory Caldwell, R. R. No. 3, Columbia, Tenn., wants prices, etc., on factory sizes in cannery outfit; also cans, labels and cases.

Cars.—W. J. Alford, 3517 N. 27th St., North Birmingham, Ala., wants second-hand 36-inch-gauge drop-bottom cars to hold 10 tons coal each; for Birmingham delivery.

Chair Cane.—R. L. Roberts, Jefferson, Ga., wants addresses of jobbers or dealers in chair cane.

Chains.—Herman Dullere, Saventhem, Belgium, wants (with view to agency) prices on chains.

Chemical Manufacturing Machinery.—Gershon Bros. Company, 478 Marietta St., Atlanta, Ga., wants addresses of makers of machinery for manufacturing floor-sweeping compounds.

Church Furniture.—John W. Boring, Gibsonville, N. C., wants addresses of manufacturers of church furniture, including pulpit furniture.

Cement.—Secretary of Mississippi River Commission, 1307 Liggett Bldg., St. Louis, Mo., will receive bids until March 21 for 1000 barrels of American Portland cement; specifications and blank form of proposal furnished on application.

Concrete Mixer.—J. W. Seaver, Jr., chief engineer Southern Assembly, Waynesville, N. C., wants second-hand concrete mixer of one yard capacity. Give details and price.

Cotton Machinery.—See "Knitting Machinery, etc."

Crane and Bucket.—Walter C. Mercer, 506 W. Grace St., Richmond, Va., wants to buy second-hand locomotive crane with grab

bucket for sand; standard, and first-class condition.

Crusher.—J. W. Seaver, Jr., chief engineer Southern Assembly, Waynesville, N. C., wants second-hand gyratory crusher, 30 to 100 yards capacity. Give details and price.

Crusher.—Choctaw Portland Cement Works, Hartshorne, Okla., wants quotations on second-hand jaw or single-roll crusher, with receiving opening about 30x30 inches.

Curry-combs.—Herman Dullere, Saventhem, Belgium, wants prices on curry-combs; view to agency.

Distilling Machinery.—Tallahassee Land Co., W. O. Meier, president, 222 First National Bank Bldg., Denver, Col., will be ready to receive bids about May 1 on machinery for treating turpentine-bearing wood, stumps, etc., in Leon, Wakulla and Jefferson counties, Florida.

Distilling Machinery, etc.—Rose Farm, Rev. H. D. Money, Jr., manager, Ocean Springs, Miss., wants data and information on manufacture of turpentine, oil, tar, etc., from fat pine or lightwood stumps, etc.

Drainage.—Commissioners Wayne County Drainage District No. 1, John R. Wooten, chairman, Goldsboro, N. C., will receive bids until noon April 3 for construction of drainage canals in vicinity of Best Station, comprising canals 1½ miles long; yardage to be excavated, 290,000; certified check, \$1000; specifications and blank proposal forms furnished upon application, and full set of maps, plans and profiles may be seen at office of Floyd H. Uzzell, superintendent of construction, near Best Station, N. C.; complete sets of plans and profiles furnished on application to superintendent of construction accompanied by \$2.

Dredge Bucket.—See "Crane and Bucket."

Dredging.—Board of Public Works, D. B. McKay, chairman, Tampa, Fla., will receive bids until 2 P. M. March 19 for dredging slip 50 feet wide from Government channel in Hillsborough River to concrete bulkhead at foot of Whiting St.; depth of 10 feet below top of concrete bulkhead; certified check \$200; Allen Thomas, clerk.

Drill Press.—Schwartz Sheet Metal Works, 213 Crawford St., Houston, Tex., wants small power drill press.

Electric Lighting Fixtures.—Besche Bros., 1041 Light St., Baltimore, Md., wants prices on electric fixtures.

Electrical Machinery.—C. W. Johnston, president Highland Park Manufacturing Co., Charlotte, N. C., wants 250-kilowatt 2300-volt three-phase 60-cycle 450 R. P. M. second-hand generator; rope driven; also direct-connected engine and generator of same capacity as above; state full particulars, location, etc.

Electrical Machinery.—Besche Bros., 1041 Light St., Baltimore, Md., wants prices on electric motor.

Electrical Machinery.—Proposals received at office of United States Service, Los Angeles, Cal., until 2 P. M. April 8 for furnishing electrical apparatus for Truckee-Carson project, Nevada; for particulars address United States Reclamation Service, 605 Federal Bldg., Los Angeles, Cal., or Washington, D. C.; F. H. Newell, director.

Electrical Machinery.—L. Jeusette, Quai Conneau 71, Liege, Belgium, wants to correspond with American firms relative to system of electric heating for street railway cars; want temperature of 12 degrees at least; 12 degrees centigrade equal to about 54 degrees Fahrenheit, 12 degrees Reaumur, about 60 degrees.

Electrical Machinery.—See "Engine" wanted by W. J. Alford.

Electrical Machinery.—John W. Summers, Route No. 5, Statesville, N. C., wants prices on 14-horse-power, 12-horse-power, 8-horse-power and 6-horse-power electric motors for use in buildings on farm.

Elevator.—Besche Bros., 1041 Light St., Baltimore, Md., wants prices on electric elevator.

Elevator.—R. E. Burriss, Anderson, S. C., wants prices on electric elevators.

Engine.—Davidson Lumber Co., Camden, S. C., wants small Corliss engine; standard make; about 75 horse-power.

Engine.—J. W. Seaver, Jr., chief engineer Southern Assembly, Waynesville, N. C., wants 30-horse-power engine; also 10-horse-power engine for derrick; second-hand. Give details and prices.

Engine and Boiler.—Allegany County Road Directors, Cumberland, Md., will receive bids until 2 P. M. March 16 for furnishing 100-horse-power engine with 125-horse-power boiler, suitable for operating

crushing plants; each proposal to be accompanied by complete specifications describing engine and boiler to be furnished and cash price for same f. o. b. cars on "crusher siding" near Barrellville, Md.; also price f. o. b. cars "crusher siding" taking old engine and boiler as part payment; Clinton Uhl, president Road Directors, Mt. Savage, Md.

Engine.—Box No. 1, Chattanooga, Tenn., wants 16x36-inch left-hand Corliss engine; would consider second-hand, good condition.

Engine.—W. J. Alford, 3517 N. 27th St., North Birmingham, Ala., wants second-hand 150-horse-power engine, direct connected to motor, 250 V. D. C.

Engine.—O. R. Whitney, 39 Cortlandt St., New York, wants second-hand 300 horse-power or more Corliss engine with rope drive; prompt delivery.

Engine.—American Box Co., Box 165, Lynchburg, Va., wants second-hand (practically good as new) 150-horse-power right-hand short-coupled Corliss engine; prices f. o. b. Lynchburg.

Excelsior Machinery.—W. M. Marriner, 1132 S. Louise St., Birmingham, Ala., wants to correspond with manufacturers of excelsior machinery.

Fiber Machinery.—Juan San German, Socorro, Columbia, wants catalogues, prices, etc., from manufacturers of machinery for working up vegetable fiber.

Flooring.—Empire Construction Co., Room 11 Union Bank Bldg., Douglas, Ga., wants hardwood floor.

Grease Cups.—Yadkin Valley Mill & Lumber Co., Ronda, N. C., wants prices on grease cups.

Handle Lathe.—Moravian Falls Milling Co., J. T. Humphries, manager, Moravian Falls, N. C., wants axe handle and spoke lathe; new or second-hand.

Hardwood.—See "Flooring."

Harness Makers' Materials.—Herman Dullere, Saventhem, Belgium, wants (with view to agency) prices on iron, steel, leather, etc., for harness makers.

Heating Plant.—Bonfoey & Elliott, Tampa, Fla., want information, etc., on unit hot-air heating system for \$30,000 school building.

Heating Plant.—E. F. Cooper, Athens, W. Va., wants prices on heating plant for 30x60-foot store building.

Hoisting Equipment.—O. R. Whitney, 39 Cortlandt St., New York, wants second-hand 40 to 50-horse-power double-drum 250-volt electric hoist with swinging attachment, and 10x12 double-cylinder double-drum skeleton hoisting engine; prompt delivery.

House Furnishings, etc.—American Manufacturing Co., Lexington, Tenn., wants catalogues and jobbers' prices on carpets, furniture, queensware, cut glass, silverware, clocks, watches, jewelry, lamps, sewing machines, dolls and lace curtains.

Ice Machinery.—A. F. Meyers, manager, Dickson, Tenn., wants prices on machinery, including boiler for 10-ton ice plant at Barnesville, Ga.

Ice Machinery.—Carpenter, Taylor & Co., Rutherfordton, N. C., want prices, cuts and full description of machinery for 10 and 12-ton ice plant.

Kitchen Utensils.—Herman Dullere, Saventhem, Belgium, wants (with view to agency) prices on kitchen utensils.

Knitting Machinery.—E. J. Sims, R. F. D. No. 1, Box 80, Shiro, Tex., wants machinery for knitting weaving apparel.

Knitting Machinery, etc.—John Driscoll, Shiro, Tex., wants prices on knitting machines and information on operation; also data relative to manufacture of cloth, etc.

Lamps.—Herman Dullere, Saventhem, Belgium, wants (with view to agency) prices on lamps for vehicles and for reading.

Laundry Equipment.—Drury B. Lasserville, Salem, Va., wants prices on machinery and supplies for proposed "wet wash" laundry.

Linen and Silk.—W. T. Kennedy, Boulder, Colo., wants addresses of linen and silk manufacturers in United States, preferably near Mississippi, so as to obtain reduced rates west.

Locomotive.—O. R. Whitney, 39 Cortlandt St., New York, wants second-hand 7x10 30-inch gauge locomotive; prompt delivery.

Locomotive.—W. J. Alford, 3517 N. 17th St., North Birmingham, Ala., wants (for North Carolina delivery) second-hand standard gauge geared locomotive, capacity 35 to 50 tons.

Locomotive.—W. J. Alford, 3517 N. 27th St., North Birmingham, Ala., wants second-

hand 36-inch gauge saddle-tank locomotive; for Birmingham delivery.

Lumber.—Florentino C. Pogliano, San Pedrito 76, Flores, Buenos Aires, Argentina, wants to correspond with exporters of American woods; view to representation.

Machine Tools.—Schwartz Sheet Metal Works, 213 Crawford St., Houston, Tex., wants prices on second-hand forming rolls to roll No. 8 and lighter four or five feet long; also punch and drill press; all belt driven.

Machine Tools.—Jarvis-Huntington Automobile Co., 418 Robson Prichard Bldg., Huntington, W. Va., wants milling machine with attachments (Brown & Sharpe No. 3 preferred); 12-inch shaper (American Tool Works or Cincinnati preferred); turret lathe (Jones & Lamson, small, preferred); reamer and cutter grinder (Brown & Sharpe 18 inches long or Le Blond preferred); drill grinder (Standard Tool Co. or Morse Twist Drill Machine Works preferred).

Machine Tools.—Kelley-Clark Lumber Co., Gradyville, Ga., wants second-hand lathe, wheel press and shaper for machine shop.

Manilla.—Ettore Diana, via Mansoni, 3 p. 20, Spezia, Italy, wants to correspond with American manufacturers relative to importation of manilla.

Metal.—Yadkin Valley Mill & Lumber Co., Ronda, N. C., wants prices on Babbitt metal.

Metal Ceilings.—E. F. Cooper, Athens, W. Va., wants prices on metal ceilings.

Metal-working Machinery.—F. W. Ferguson, 1600 Rosewood Ave., Louisville, Ky., wants data and prices on machinery for manufacturing chimney caps, including special equipment, molds, etc.

Milling Machine, etc.—Artesian Well Co., Wilson, N. C., wants to correspond with parties having second-hand 14-inch shaper and No. 2 milling machine for sale.

Milling Machinery.—Juan San German, Socorro, Colombia, wants catalogues, prices, etc., from manufacturers of machinery for preparing coffee, sugar, rice, cocoa, corn; also machinery for hominy mills, etc.

Mining and Milling Machinery.—Bonwick, Hignett & Co., Bull's Chambers, 11 Moore St., Sydney, N. S. W., Australia, want to correspond with manufacturers of milling and mining machinery; view to representation.

Motor-cycles.—See "Automobiles, etc."

Musical Instruments.—American Manufacturing Co., Lexington, Tenn., wants catalogues and jobbers' prices on musical instruments.

Nailing Machine.—Carolina Washboard Co., 112 W. Davie St., Raleigh, N. C., wants small two or four-stroke nailing machine for two-penny wire nails.

Navy Equipment.—Ettore Diana, via Mansoni, 3 p. 20, Spezia, Italy, wants to correspond with American manufacturers relative to agency for ordnance, including guns, swords, projectiles, etc., instruments of precision and technical appliances and equipments for navies.

Naval Supplies.—Proposals will be received at Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 A. M. April 9, and publicly opened immediately thereafter, to furnish at Navy-yard, Washington, D. C., a quantity of naval supplies as follows: Schedule 4407, furnishing and installing motor-driven pumping outfit; schedule 4409, round brass, copper sheets, naval bronze, pig-iron, nickel, ingot zinc, brass tubes, flexible copper tubing, copper and brass tubing; schedule 4410, hardware, poplar. Applications for proposals should designate schedules desired by number. Blank proposals furnished upon application to Bureau. T. J. Cowie, Paymaster-General, U. S. N.

Novelties.—Compagnie Industrielle Blaive, 32, Rue Baudin, Paris, France, wants prices on new patent articles; view to agency.

Painting.—Besche Bros., 1041 Light St., Baltimore, Md., wants prices on painting.

Paper Tubing.—Herman Dullere, Saventhem, Belgium, wants (with view to agency) prices on paper tubing.

Paving.—J. R. Scurry, City Clerk, Newberry, S. C., will receive bids until noon March 20 for 5000 square yards vitrified block pavement; plans and specifications on file with City Clerk and with P. S. Norris, civil engineer, Aiken, S. C.

Paving.—Proposals received until noon March 25 by Board of Commissioners for Street Improvement District No. 122 (West 7th St.), Little Rock, Ark., for grading, draining, curbing and paving with wood block, asphalt or brick 16,850 square yards. Plans

previous year, and still have a large volume of work ahead. The company has plans to erect a building 90x150 feet of steel construction to take care of its increased boiler business and for the construction of tanks of all kinds.

The L. A. Green Co.'s New Quarters.

A building constructed to suit its requirements has been leased by the L. A. Green Company, Park Bldg., Pittsburgh. The new building is at 3145 Penn Ave., Pittsburgh, and is to be occupied about April 1. The L. A. Green Company deals in rails, machinery and equipment for mills, mines and contracting work, etc. The new building has about 7000 square feet of space and will provide display and warehouse facilities in addition to offices. The company's name will be changed to the L. A. Green Equipment Co. as soon as the new building is occupied, the new company dealing in the same line as heretofore, but on a more extensive scale.

To Develop Factory Sites.

The development of the manufacturing sites west and northwest of East Point, near Atlanta, Ga., is under the management of J. T. Kimbrough of J. T. Kimbrough & Co., who has entire charge of the work. It is reported that the Central of Georgia Railway has plans to be executed in the near future for the extensive development of several hundred manufacturing sites near East Point, which will eventually mean the construction of a belt line along the western side of Atlanta. It is planned to run a line of tracks out in a northwesterly direction from Cheney Station for the development of about 150 acres of ground which the Central of Georgia Railway owns.

The Southern States Fire & Casualty Insurance Co.

Under its new management, with D. E. Manasco as president and R. B. Watts vice-president, the Southern States Fire & Casualty Insurance Co. of Birmingham, Ala., is entering upon an era of aggressive, though conservative, enterprise in the South. In the furtherance of this policy Sumter Cogswell, formerly a prominent insurance man of Atlanta, and now president of the First National Bank of Pell City, president of the Pell City Realty Co. and a director of the Pell City Manufacturing Co., has been appointed manager of the fire underwriting department of this insurance company. Mr. Cogswell's experience and other characteristics are such that his return to the insurance field is noted with wide interest.

Sales of Fairbanks-Morse Engines.

The Orleans Metal Bed Co. of New Orleans has recently purchased two 30-horse-power engines and two 60 KVA generators for its power plant. These engines are Fairbanks-Morse gasoline engines, made to operate with low-grade oil. The Doane & Bartlett Co., Beaufort, N. C., has purchased two 75-horse-power Fairbanks-Morse marine engines and two 6-horse-power hoists. This company is engaged in fishing on a large scale and has a number of Fairbanks-Morse engines in use on its sea-going fishing boats. These engines are built by Fairbanks, Morse & Co., Chicago, with Southern offices in Atlanta, Richmond, Jacksonville and New Orleans. E. G. Vail, manager of the Southern sales department, states that the prospects for selling large engines operating on oil are exceptionally bright throughout the entire southern territory.

A Big Prize for Inventors.

A number of men connected with the rubber industry have subscribed the sum of \$7500 to be given to the inventor or inventors who develop the best method of making rubber non-slipping for pavements, roads, etc., or for any use for which it may be put in all weathers and for all kinds of traffic. Announcements of the progress made will be given out at the International Rubber Exposition, which opens at the New Grand Central Palace, New York, next September. The intention is to divide the sum into three prizes. An important point is that the inventor or inventors will have absolute rights in the invention, the patent being conveyed free to the successful competitor or competitor. Information regarding this offer may be obtained by corresponding with A. Staines Manders, organizing manager of the Third International Rubber Exposition, Grand Central Palace, New York.

Taplin-Rice-Clerkin Co.'s Products.

A large contract for equipment and additional machinery to be installed by the Los Angeles Pressed Brick Co., Los Angeles, Cal., has been awarded to the Taplin-Rice-Clerkin Company of Akron, O. This company sent a

representative to inspect various types of clayworking machinery before awarding the contract to the Akron company. This contract, in addition to a large number of others, will enable the company to keep its plant running to its full capacity for several months. This company also manufactures "Climax" stoves, ranges and furnaces, which have been favorably known for more than 40 years in every section of the world where stoves are used. They began the manufacture of stoves, ranges and furnaces in 1865, and in 1872 began the manufacture of clayworking machinery. A large number of plants equipped with its machinery and their successful operation is evidence of their merit.

Railway Motor Pinion Remover.

Realizing that a demand exists for a suitable device for quickly removing pinions from railway motor armature shafts, the General Electric Co., Schenectady, N. Y., has placed on the market a specially-designed pinion puller. This device is light, and can be handled easily and quickly by one man. The ring is slipped over the pinion, its teeth passing between those of the pinion, and then a slight turn brings the teeth of both in line. A cylindrical piece of metal is then placed between the shaft and the jack-screw passing through the middle of the yoke. By screwing the jack-screw into the collar the pinion is easily removed. The two bolts holding the yoke to the ring are of liberal length to permit adjusting the device for the removal of pinions of any thickness met with in practice which have the same number of teeth as the pinion puller. The complete line includes pullers for all railway motor pinions.

The Conover-Overkamp Machine & Tool Co.

C. H. Overkamp has become a member of the Conover-Overkamp Machine & Tool Co., Dayton, O., which has taken over the Miami Valley Machine Tool Co. of that city. The new company continues the manufacture of the 14 and 16-inch Miami lathe, high-speed drilling machines and tool-grinding machines, and will put upon the market 18 and 20-inch lathes, with or without quick change gear boxes, and also a line of gap lathes. Mr. Overkamp has been identified with the machine tool business for a number of years in Cincinnati and Canada and will devote his attention to the designing and manufacturing departments. P. P. H. Conover has been connected with the Miami Valley Machine Tool Co. since its organization. He will continue to look after the sales department. A number of new machine tools will be required to supplement the present equipment of its plant.

Western Electric Portable Train Set.

The many incidents which occur and the occasions for the use of portable telephone sets by railroad repair gangs, bridge tenders, track inspectors, etc., have impressed railway authorities with the value of the portable train set manufactured by the Western Electric Co., 463 West St., New York. The Lehigh Valley Railroad has purchased over 700 of these sets during the past year. Each train unit, bridge crew and track repair gang is furnished with one. They are said to have more than paid for themselves already. The foreman of one of its repair gangs, having just been supplied with one of these sets, saved over two hours' delay for himself and 40 men by continuing with repair work ahead of the "Black Diamond" train, by ascertaining with his portable telephone set that this train was two hours late on account of a snow slide. In an emergency the train crew can communicate immediately with the dispatcher and give detailed information, which will save delays in arranging for relief trains and for re-routing trains, etc.

TRADE LITERATURE.

Zelnicker's Sales List.

The rails, locomotives, cars, railroad equipment, contractors' supplies, machinery, etc., on hand and for sale by the Walter A. Zelnicker Supply Co., St. Louis, are listed in its Bulletin 129. A list of special sawmill machinery in stock for a quick sale is included. This bulletin will be sent to interested persons on request to the company, 4th and Locust Sts., St. Louis.

The Squires Improved Steam Trap.

A steam trap which is the result of years of experience in manufacturing steam specialties, and which is distinguished by the ready access to the few working parts, low cost of maintenance, capacity, durability and efficiency, is the Squires Improved Steam Trap, sold by V. Bicigalupo, American National Bank Bldg., Richmond, Va. This trap is described and illustrated and tables of

sizes, capacity and prices given in the folder catalogue issued by the company.

The Steptoe Improved Shaper.

Many time-saving features are adopted in the improved line of shapers manufactured by the John Steptoe Shaper Co., Cincinnati. This company was established in 1845. Its long experience in manufacturing shapers places it in a position to know all the requirements of a good machine. The various sizes, types and equipments of these shapers are described and illustrated in a loose-leaf catalogue issued by the company, in which a page is devoted to the description of each type and size of shaper presented.

Harry's Culvert and Tank News.

Louisiana highways and the modern methods of road building employed by the State of Louisiana through its Board of State Engineers constitutes one of the principal articles in Harry's Culvert and Tank News, Vol. 2, No. 2, published by the Harry Bros. Company of New Orleans, Newport, Ky., and Dallas, Tex. Several views of "Harry's" culverts in use and others loaded on cars ready for transportation are shown. This company manufactures "Harry's" corrugated metal culverts, tanks, water and feed troughs, and has branches in each of the cities named.

The Use of Lime in Agriculture.

The question of the amount of lime to be used per acre, what form of lime to use, its value, and a number of practical experiences with lime are noted and discussed in "Farm Economics" for March, a quarterly publication distributed free by the Charles Warner Company, 103 Park Ave., New York City. Illustrations are included, showing the educational train sent out by the Security Cement & Lime Co., manufacturer of Berkeley lime, also two illustrations showing a blast removing 30,000 tons of stone in its quarries at Berkeley. A charge of 25 cents a year is made for the publication in the Southern and Western States.

Mechanical Stresses in Transmission Lines.

The engineering experiment station of the University of Illinois has just issued Bulletin No. 54 on "Mechanical Stresses in Transmission Lines." This bulletin has been prepared by A. Guell, and gives a careful discussion of the strength of spans of electric wire or cable under the action of wind, ice, snow, cold and heat. Methods of calculating necessary sizes for foundations for poles and towers for carrying spans of wire are also given. Copies of the bulletin may be obtained upon request to W. F. M. Goss, director of the engineering experiment station, University of Illinois, Urbana, Ill.

Mining and Contractors' Pneumatic Tools.

The Chicago Pneumatic Tool Co., Fisher Bldg., Chicago, and 50 Church St., New York, has issued circular No. 97, presenting types of machinery which it manufactures especially for mining, quarrying and contracting. The name of the Chicago Pneumatic Tool Co. is intimately associated with its various products, and one of the purposes of the circular is to bring out this point. Chicago giant rock drills, Chicago pneumatic air compressors and Chicago giant piledriver air compressors and Chicago giant piledrivers are described and illustrated in this circular. Many other Chicago pneumatic tools are listed and briefly described.

Resources of Altavista, Va.

The varied industries, advantages and resources of Altavista, Va., are stated in a pamphlet recently issued from that city. A statement of the manufacturing enterprises located there, views of business and residence buildings, etc., are included. The advantages of climate, pure water, free sites for manufacturing purposes, etc., are stated. Altavista has an elevation of 700 feet above sea level, and is at the junction of the Virginian Railway and the Southern Railway, 44 miles from Roanoke and 26 miles from Lynchburg. This pamphlet may be obtained by addressing Lane, Harris & Co. or the Lane Brothers Company, Altavista.

Ingersoll-Rand Butterfly Hammer Drills.

Drills equipped with telescope feed and also furnished with dust allayers, which are strongly advocated as a safeguard for the health of miners, are described and illustrated in Bulletin 4111 of the Ingersoll-Rand Company, 11 Broadway, New York. These are the "BC" type butterfly hammer drills. Water can be sucked up six or eight feet from a pail, no tank or pressure line being necessary. This makes the use of the water spray possible, no matter how small the

working or how far away the source of water-supply. The positiveness and simplicity of the butterfly valve used on this drill is a very desirable feature. The catalogue shows sectional views of the machine and other views where it is engaged at work underground. The action of the butterfly valve is also explained.

Fleming Harrisburg Engines.

Modern operating conditions have become so diversified, and at the same time so specialized, that it has become difficult for the purchaser of a power unit to select the particular type best adapted to his requirements. In its bulletin, "Considerations Governing the Selection of a Modern Steam Engine," the Harrisburg Foundry & Machine Works, Harrisburg, Pa., explains the advantages under varying conditions of the different classes of Fleming Harrisburg engines. The various types are illustrated in the bulletin, and explanations are given regarding the particular conditions under which each type may be used to advantage.

McKenna Bros. Brass Co.'s Manufactures.

The brass and bronze railings, grilles, window guards, ladders, hand and electric elevators, foot rails, cast-brass rail fittings, etc., manufactured by the McKenna Bros. Brass Co., Pittsburgh, are illustrated and described in the revised catalogue recently issued by the company. Many new articles and others with improvements not previously listed are found in this catalogue. A large stock of brass tubing and rail fittings of various sizes is carried, which, together with its large machine shop and foundry, enables the company to manufacture and make prompt shipments of its goods.

Erie High-Duty Centrifugal Pumps.

The high-duty centrifugal pumps manufactured by the Erie Pump and Engine Works, Erie, Pa., are illustrated in bulletin No. 28, together with brief descriptions, specifications and price-lists. Pumps noted in this bulletin include the Class M single-suction, double-suction and vertical-suction pumps, both belt and motor driven. Attention is called to the ease with which these pumps may be made to suit special conditions. Among those illustrated are 10-inch and 12-inch pumps installed on a rice plantation for irrigation, the suction and discharge pipes being placed at angles to conform to the surface of the land and to eliminate the use of elbows.

Sturtevant Aeronautical Motors.

A new aeronautical motor brought out by the B. F. Sturtevant Company, Hyde Park, Boston, indicates that well-established companies realize the importance of aeronautics and the commercial practicability of the subject. Catalogue No. 200 has been published by the company illustrating and describing the Sturtevant aeronautical motors of 40 and 60 horse-power. Specifications are included, together with rates, cost prices, etc. The motor is of a four-cycle type of gasoline motor with four and six cylinders in the two sizes. The weight of the motor has been reduced only in the design and use of the strongest material, without sacrificing strength. This catalogue will be sent on request.

International Acheson Graphite Co.'s Lubricants.

Three forms of lubricants manufactured by the International Acheson Graphite Co., Niagara Falls, N. Y., are described in a pamphlet issued by the company. These are "olidag," flake graphite diffused in oil; "gredag," disintegrated graphite in combination with grease, and "aquadag," flake graphite diffused in water. By using olidag with motor oil it is claimed that increased compression will be obtained and freedom from carbon trouble, cool bearings and a saving of oil consumption will result. Gredag is used in lubricating the gearing of automobiles and other machinery and aquadag is valuable as an aid in metal cutting, as it acts as a cooling agent as well as a lubricant.

The Davis Triplex Power Pump.

The triplex pump which I. B. Davis & Son, Hartford, Conn., have been manufacturing for several years is now sold in its latest improved form as Type G, which has many valuable features. In its catalogue entitled "The Davis Triplex Power Pump, Type G," it is fully illustrated and its advantages are stated. It is designed for different forms of power application, including belt-driven, chain-driven, etc. The uprights are of the box pattern, insuring great strength. The gearing is powerful and takes the strain at the proper point near the center of the load.

The teeth are machine cut and practically noiseless in operation. The bearings are large and of ample strength for long and severe service, and the boxes are babbitted and adjustable. The valve chambers can be renewed in case of wear or accidental breakage at a slight cost. This catalogue and all information desired will be furnished on request to the company.

The Hauserlake Dam.

A fully illustrated descriptive pamphlet has been published by the Stone & Webster Engineering Corporation, Boston, Mass., showing the Hauserlake dam erected for the United Missouri River Power Co. at Hauserlake, Mo., to replace one which failed in 1908. The new dam is 490 feet long, 132 feet high and 85 feet thick through the base, and contains 35,000 cubic yards of concrete. The old dam was part of a 20,000-horse-power hydroelectric plant, and was built of structural steel resting on a concrete pad laid over a line of steel sheet piling. In the new dam pneumatic calsons were used to complete a large part of the under-water work. These were made and operated by the Foundation Company of New York. Numerous difficulties which were encountered in clearing away the old dam and in constructing the new one while at the same time caring for the continuous flow of the river makes an interesting study in dam construction, as presented in this pamphlet.

Cruse Engineering Co.'s Safety Gas-Holders.

A special study of gasholder design and construction has been made by Arthur R. Cruse for over 30 years. He states that during that time he has designed over 3000 gas-holders and contracted for the construction of over 500. He has determined to make a specialty of consultation, designing and inspection in gas engineering construction. He will operate as the Cruse Engineering Co., Crozer Bldg., Philadelphia, in construction and installation of gasholders, purifiers, gas machinery and tanks of all kinds. He has recently issued two pamphlets, "Pointers on Gasholder Construction" and "Safety Valves for Gasholders." He has patented a safety valve for relief and high pressure distribution holders. This valve is described in one of the pamphlets. These pamphlets contain much information upon the subject of gas-holders, and will be sent on request to the Cruse Engineering Co.

Wheeler Condensers.

The various lines of condensing apparatus manufactured by the Wheeler Condenser & Engineering Co., Carteret, N. J., are described and illustrated in the condenser catalogue recently issued by the company. It is pointed out that each condensing equipment presents a problem in itself, depending on the requirements of load, vacuum, water supply, temperature, etc. The condensers described include the Wheeler admiralty surface condenser, the Wheeler-Volti combined condenser and feed-water heater, the Wheeler dry-tube surface condenser and the Wheeler rectangular jet condenser for high vacuum work. Wheeler barometric jet condensers, the Wheeler-Edwards air pump, Wheeler centrifugal dry vacuum air pump and Wheeler centrifugal pumps are also described. Two types of Wheeler cooling towers and Wheeler feed-water heaters and exhaust relief valves are also included. This catalogue may be obtained by applying to the company.

The Norton Company's Gold Medal. The gold medal offered by the Scientific American as an award to the institution developing the highest type of safety devices for the protection of American workmen was awarded to the Norton Company, Worcester, Mass., at the annual meeting of the American Museum of Safety. The award represents not only a recognition of effectiveness of the devices exhibited in the rooms of the American Museum of Safety, New York, but also the spirit and pioneer work which prompted the winner in developing and introducing safety devices entirely on its own initiative and for the benefit of those using its product. "Grits and Grinds," Vol. 3, No. 10, published by the Norton Company, contains a full account of this award and a description of the American Museum of Safety, with several articles on safety museums. Descriptions and illustrations of the protection hoods for Norton grinders are also included.

Dow Conveying Machinery.

One department of the Dow Wire and Iron Works, Louisville, is devoted to the manufacture of conveying machinery, including spiral slide conveyors, Dow conveyor systems for handling merchandise in department stores, hardware stores, shoe factories,

packing-houses, bottling works, etc. A pamphlet recently issued by the company illustrates and describes these conveyors, including the open gravity conveyor made of sheet steel, the patent ball-bearing roller gravity conveyor, the Dow automatic elevator and "lowerator," the Dow belt table, coal and ash conveyor, etc. This company has carefully studied the needs of different industries for conveyor systems, and in its output attempts to supply such needs. Its engineers are capable of solving various conveyor problems, and their services are for the use and benefit of prospective purchasers. When called upon the company will send one of its corps of engineers to study your conveyor problems and furnish a statement of the best solution. This pamphlet will be sent on request to interested persons.

The Randall Tramrail System.

The many ways in which the use of the Randall tramrail system saves expense and waste and tends toward efficiency in foundries, machine shops and factories are explained in the two catalogues, "Overhead Tramming" and "Foundry Economy," issued by the Randall Tramrail Co., Philadelphia. Illustrations are included in these catalogues showing the tramrail system in actual operation in large industrial plants; also detailed sketches of the various parts, and statements are made of how and why this system saves expense and waste. It consists principally of overhead I-beams, the lower flanges of which act as runners upon which trolley wheels with roller bearings travel and carry a small frame to which transportation buckets, etc., may be attached. These tramrails are installed as may be required, so that the trolleys pass along in all parts of the foundry or shops. They are overhead, well out of the way. These catalogues and other information will be sent on request to the company.

Brownhoist' Rapid Freight-Handling Equipment.

No mechanical problem at the present time offers more encouragement to the engineer than that of the development of new means of handling the enormous tonnage of the world's commerce in package freight. The experience which has been gained during the evolution of machinery for handling bulk material is a valuable asset with which the engineer is equipped to solve the problem of handling miscellaneous freight packages. The Brown Hoisting Machinery Co., Cleveland, has been developing a large variety of trolleys, cranes and overhead carrying mechanisms particularly designed to unload, transport and load miscellaneous freight. The "Brownhoist" rapid freight-handling equipment now manufactured by this company is illustrated and described in a pamphlet recently issued, in which many forms of quick handling equipment are shown. This pamphlet will be mailed to interested persons on request, and the company will supplement the information contained therein with more detailed data upon the receipt of detailed statements regarding freight-handling problems.

The Humason Rail Joint.

A new type of rail joint for railroads which gives the maximum of strength and efficiency for a minimum weight has been introduced by the Humason Rail Joint Co., Shreveport, La. A pamphlet has recently been published by the company which describes and illustrates the Humason rail joint, together with statements of its advantages and of tests which have been made showing its strength and reliability. One of its features is that by its use deflection at the ends of rails by the weight of approaching wheels is prevented. Reports of the successful tests of the joint by the roadmasters of the Southern Division of the Kansas City Southern Railway and of the Vicksburg, Shreveport & Pacific Railway are included in the pamphlet. The results of official tests at the Watertown Arsenal, the Washington Navy Yard and at the Kansas City Southern Railway shops are also stated. This joint is made for application to rails at present in position and also for new construction. The interlocking form is preferable for use on curves, at switches and frogs, etc., to prevent lateral yielding as well as vertical motion of the rail ends. The pamphlet will be sent to interested persons on request.

Wyckoff's Cypress Steam Pipe Covering.

The use of cypress as a pipe covering is described in a pamphlet issued by A. Wyckoff & Son Company, Elmira, N. Y., regarding Wyckoff's improved steampipe covering. This casing is composed of selected staves of cypress. The two-inch staves for the inner shell are drawn together by heavy

tension into the form of a tube and firmly bound with galvanized steel wire. Four layers of asphaltum packing four inches wide are then secured at each end of the casing. Another casing of one-inch cypress staves is then fitted, thus making two casings of cypress wood, with a one-quarter-inch dead-air space extending the entire length of the casing. This makes a combination of non-conducting materials which prevents the radiation of heat. For underground use the

covering is completely coated on the outside with the preservative Hydrolene-B and then rolled in sawdust to prevent the coating from being scraped off. When used overhead the coating is furnished painted with black asphaltum paint. This casing is made in lengths of from four to twelve feet, which are then united in a watertight joint. This pamphlet will be sent on request and the company will quote prices for any size or quantity of casing required.

MOTOR VEHICLES AND TRACTORS.

Joseph Dixon's Motor Chain Graphite

The Joseph Dixon Crucible Co. of Jersey City has placed on the market a new chain graphite especially adapted for lubricating the chains of motor trucks and automobiles. This preparation is put up in sticks of cylindrical shape, two inches by eight inches, enclosed in cardboard cartons weighing one pound each. It is made of the same material as the Dixon bicycle stick graphite, which is already well known. An advantage of this lubricant is that a bar may be carried on the car ready for use at any time. To apply it is simply necessary to rub the bar against the sprocket side of the chain, and it keeps the driving chain in good condition.

Norfolk's Automobile Show Attracting Large Crowds.

Automobile show interests are this week centered in Norfolk, which is holding its first automobile and commercial car show. When the Automobile Trade Association of Norfolk first decided to hold an exhibit, it was problematical as to how many cars would be shown, and what support the public would give to an exhibition of this kind in Norfolk. The results have been a surprise to everyone, and now the Norfolk Automobile Show is receiving the attention of visitors from Washington, Baltimore, Philadelphia, Richmond, Columbia and

In stock all kinds of automobile supplies, and is prepared to execute repairing promptly. This garage is located on the Fairmont and Staunton turnpike, which is a thoroughfare to the Shenandoah Valley. It is 30 miles from Fairmont and 21 miles from Elkins, W. Va., in the heart of the coal district.

The Jarvis-Huntington Motor Truck.

The accompanying illustration shows the 5-ton motor truck manufactured by the Jarvis-Huntington Automobile Co., Huntington, W. Va. This company manufactures its motors, and they are of the four-cycle four-cylinder type. The valves are set at an angle of 45 degrees in the cylinder heads, so that no useless side pockets are found. When an explosion takes place the full force is on top of the piston. The makers claim for this motor that on account of its construction it takes less gasoline for the same amount of horse-power and delivers more horse-power for the same amount of gasoline than motors of other types. The motor is four-inch bore and six-inch stroke, and develops 40 horse-power. The connecting rods are drop-forged, of I-beam section, and fitted at the crank ends with plain bearings of Parsons white brass, the two sections being held in place by half-inch steel studs. The wrist-pin bearings are made of Cramp's special bearing bronze. The crank shaft is



THE JARVIS-HUNTINGTON FIVE-TON MOTOR TRUCK.

many other cities. Visitors to the Automobile Show find every description of motor vehicle from a \$600 runabout to the \$4000 touring car and limousine. Besides pleasure cars, there are many types of trucks and delivery wagons, the aggregate value of the cars on exhibition being surprisingly large. As the result of the success of the Norfolk Automobile Show this year, plans are already being discussed for holding a show next year that will rival those of Baltimore and Washington.

Philippi Auto & Supply Co.

As an indication of the increase in the number of service stations and facilities for obtaining supplies for motor vehicles along the lines of travel in the South, information of new garages and repair stations is constantly being received by the Manufacturers Record. Typical of this information is a letter received from the Philippi Auto & Supply Co., Philippi, W. Va., in which a description is given of its equipment and repair facilities. This company has just completed a brick building 40x120 feet, with concrete floor, equipped with the Bowser system of storage, both for gasoline and lubricating oils, having an air compressor connected to a 200-gallon tank. This compressor is run by a gasoline engine, and the pressure is kept to 100 pounds. Tourists may use the pressure pipe free of charge for inflating tires. The company carries

of nickel steel, and is of ample dimension to insure great rigidity and long life. The shaft and cams are carefully hardened and ground, running in phosphor bronze bearings, operating the valves through drop-forged rocker arms. The crank case is of aluminum alloy in two sections. A Stromberg carburetor is used, placed on the right side of the motor. Cooling is by centrifugal pump and tube-and-fin type of radiator. Lubrication is by the splash system, a constant oil level being maintained in the crank case by means of a forced feed oil pump. Ignition is by Bosch high-tension magneto and a single set of spark plugs. The Hele-Shaw multiple disc clutch is used. This clutch is composed of 21 steel and bronze plates, running in oil, and actuated by a powerful spring, which insures easy and powerful engagement, thereby eliminating all jerks and sudden strains. The transmission is the company's own manufacture, and is of the selective type, three speeds forward and reverse. The gears and shafts are of vanadium, heat treated and hardened. All bearings throughout are of the Timken roller type. The jack shaft is of vanadium steel, heat treated, with Timken roller bearings at each end. The frame is of channel section, six inches deep, with two-inch flanges. There are six cross members, with large gusset plates top and bottom, all hot-riveted to plates. The front axle is a single piece drop-forging of the I-beam type, formed

with integral steering jaws and spring seats. The rear axle is square section steel. Timken roller bearings are fitted to all wheels. Roller bearings are also provided in the top of the steering knuckles to insure easy steering. The springs are semi-elliptic front and rear. The emergency brakes expand in rear wheel drums, and are operated by hand lever. All brakes are faced with non-burning Raybestos. The wheels are of artillery type, second-growth hickory, three-inch spokes. The wheel base is 120 inches. Solid Diamond tires with wire mesh base are used, 36x4 inch single front wheel, 36x5 inch each double rear tire. The tread is 66 inches. Normal speed, 18 miles per hour. Sales Manager A. Reis Meyer states that the three models manufactured by the Jarvis-Huntington company have been thoroughly tried out under the most severe service conditions, and are presented to the motor truck buying public with the knowledge that they will do the work intended; that the construction is so simplified that the trucks are compact and excel in simplicity and ruggedness; that the company has a well-equipped factory and an excellent engineering staff. A number of sales have already been made, and a large business is expected, especially throughout the South.

MOTOR TRUCK STANDARDS.

One of the most important conferences yet held in the interests of developing the motor truck was held in New York last week. The gathering was composed of about 50 leading engineers, manufacturers, selling and maintenance officials representing over 50 motor-truck companies. Truck problems were studied with the view of establishing standards in such respects as will operate to the mutual advantage of manufacturers and users of trucks. The meeting was held under the auspices of the National Association of Automobile Manufacturers. It was decided to recommend that the Association work towards standardization along the following lines: Standard maximum speed ratings of trucks of different capacities, with load; uniform weight allowances for bodies of the simplest form regularly catalogued for trucks of different capacities; a standard form of warranty covering defective work or material for 90 days after delivery to purchaser; the standard of dimensional tolerances on felloe bands recommended by the technical committee of the Society of Automobile Engineers. The speed ratings and body allowances were recommended as follows: Half-ton truck, speed 16 miles per hour, weight of body 500 pounds; 1-ton, 15 miles, 600 pounds; 1½-ton, 11 miles, 700 pounds; 2-ton, 13 miles, 800 pounds; 2½-ton, 12 miles, 900 pounds; 3-ton, 11 miles, 1000 pounds; 3½-ton, 10½ miles, 1100 pounds; 4-ton, 10 miles, 1200 pounds; 4½-ton, 9½ miles, 1300 pounds; 5-ton, 9 miles, 1400 pounds; 6-ton, 8 miles, 1600 pounds; 7-ton, 7 miles, 1800 pounds; 8-ton, 6 miles, 2000 pounds; 9-ton, 5½ miles, 2200 pounds; 10-ton, 5 miles, 2400 pounds. The load capacity added to the weight of body given in this list gives the total weight for each size of truck. The conference spent considerable time in discussing guarantee practice and in endeavoring to arrive at an ideal which might be generally adopted. All these recommendations were submitted to the National Association of Automobile Manufacturers and unanimously adopted, except the recommendation regarding the guarantee, final action on which was postponed.

MOTOR TRUCKS IN CHICAGO.

Observation has proven that motor trucks are profitable even in congested traffic areas in large cities where movements at times are necessarily slow owing to slower vehicles and crowded street crossings. The "Power Wagon" of Chicago states that one of its representatives in making observations of this point in Chicago recently noted a 3½-ton truck in a line with other vehicles, including a two-horse wagon carrying less than half the load of the truck. As the line of vehicles was stopped at the street crossings, the horse-drawn vehicles were slow to regain their speed, whereas the motor truck resumed its speed quickly, and by careful steering to one side gained on the horse-drawn vehicles at every stop. In nine blocks the motor truck gained four blocks, and the horse-drawn vehicle required 23 minutes to travel through those four blocks; meanwhile the motor truck had cleared the congested traffic and in that 23 minutes was four or five miles away toward its destination. In this case, although the motor truck was not giving its most economical performance, yet it was giving a much more economical performance than the horse-drawn vehicle. "Power Wagon" further states that the average motor truck in actual service in the city of Chicago, according to actual records,

is doing more than three times the work of the average horse-drawn vehicle. The wheel tax records at the Chicago City Hall show that on May 1, 1911, there were in Chicago 430 motor trucks of less than one-ton load capacity, and that on February 2, 1912, this number had increased to 836. Trucks rated at one ton and over have increased in the same time from 363 to 607. The total number of motor trucks of all classes in Chicago increased in that time from 799 to 1443, an increase of 107 per cent. In other words, the motor trucks are doubling in numbers every year, and it may be presumed that by the end of 1912 Chicago will have 3000 motor trucks in service, valued at \$6,000,000. During the time mentioned above the records show that 6386 horse-drawn wagons were discarded, showing that merchants are greatly in favor of introducing motor trucks into their transportation service. It has been estimated that \$500,000,000 is invested directly and indirectly in the manufacture of motor delivery vehicles in this country. The output for 1912 is conservatively put at 25,000 machines worth about \$62,500,000.

FINANCIAL NEWS

The MANUFACTURERS RECORD invites information about Southern financial matters, items of news about new institutions, dividends declared, securities to be issued, openings for new banks, and general discussions of financial subjects bearing upon Southern matters.

Review of the Baltimore Market.

Office MANUFACTURERS RECORD,

Baltimore, Md., March 13.

The Baltimore stock market was not so active during the past week. In the trading United Railways common sold from 19½ to 19½; do. income bonds, 64½ to 64%; do. funding 5s, 87½ to 88; do. notes, 100%; do. 4s, 85½ to 85%; Consolidated Gas, Electric Light & Power common, 100 to 108½; do. preferred, 113% to 115; do. 4½s, 90½ to 90%; Consolidated Gas 5s, 109½; do. 4½s, 98½ to 98; Seaboard Air Line common, 22½ to 23; do. preferred, 46½ to 46; Seaboard 4s, stamped, 87½ to 88; Mt. Vernon-Woodberry Cotton Duck 5s, 77 to 76½; G.-B.-S. Brewing common, 2½ to 2½; do. incomes, 7 to 6; do. 4s, 39 to 42½, with last sale at 41.

Bank stock sold as follows: Merchants', 185; Bank of Commerce, 31; Bank of Baltimore, 166; Citizens', 42; Mechanics', 28%; Maryland, 25.

Mercantile Trust sold at 152; Maryland Casualty, 97% to 97; Baltimore Trust, 160; Maryland Trust common, 110; do. preferred, 118.

Other securities were traded in thus: Atlantic Coast Line convertible debenture 4s, 102½ to 103; Baltimore Electric preferred, 45½ to 46½; do. 5s, stamped, 98 to 99; Consolidation Coal, 103 to 105½; do. refunding 4½s, 92%; do. refunding 5s, 93%; Houston Oil common, 9½ to 9%; do. trust certificates, 10½ to 10½; do. preferred, trust certificates, 63½ to 62%; do. dividend certificates, 84% to 84%; Maryland Electric 5s, 90½ to 90½; Maryland & Pennsylvania common, 36½ to 35½; do. income bonds, 72; do. 1st 4s, 80; Coal & Iron Railway 5s, 102 to 101½; Fairmont & Clarksburg Traction 5s, 100% to 100%; Lexington Railway 5s, 94%; Norfolk & Portsmouth Traction 5s, 90; Roland Park Electric & Water 5s, 101½; Chicago Railways 5s, 100% to 101; Atlantic Coast Line of Connecticut, 267 to 270; Baltimore City 3½s, 1930, 95; do. 4s, 1925, 101; do. 1926, 101; do. do. 1930, 100%; do. do. 1931, 101½; Canton Company, Baltimore, 147; New Orleans, Mobile & Chicago 1st 5s, 93% to 93%; Georgia Southern & Florida 5s, 107%; Newport News & Old Point 1st 5s, 99; Detroit United 4½s, 79; Georgia & Alabama Consolidated 5s, 107½; Atlantic Coast Line of Connecticut 5s, certificates, 105; Augusta & Aiken preferred, 83; New Orleans Great Northern 5s, 74½; Charleston & Western Carolina 5s, 107; Central Railway extension 5s, 107½; City & Suburban (Washington) 5s, 104; State of Maryland 3½s, 1927, 95; Norfolk Railway & Light 5s, 100%; Virginia Mid-

land 4th, 104; Georgia & Florida 5s, 78; Northern Central Railway stock, 127½ to 128; Florida Southern 4s, 92% to 93%; Western Maryland 4s, 88; Baltimore Traction 5s, 107½; Norfolk Railway & Light common, 27.

SECURITIES AT BALTIMORE.

Last Quotations for the Week Ended March 13, 1912.

Railroad Stocks. Par. Bid. Asked.

Atlantic Coast Line	100	133½	129½
Atlantic Coast of Conn.	100	268	270
Georgia Son. & Fla. 1st Pfd.	100	35	35
Maryland & Pennsylvania	100	25½	25
Norfolk Railway & Light	25	27	27
United Ry. & Elec. Co.	50	19½	19½
Western Maryland	100	58½	59½

Bank Stocks.

Bank of Baltimore	100	165	168
Bank of Commerce	15	...	...
Citizens'	10	41%	41%
Exchange	100	162	165
First National	100	120	120
German	100	108	108
Mechanics'	10	23½	23½
Merchants'	100	186	186
Union	100	125	125

Trust, Fidelity and Casualty Stocks.

American Bonding	25	76	77½
Baltimore Trust	100	166	167½
Continental Trust	50	28½	29
Fidelity & Deposit	100	220	224
Fidelity Trust	100	223	223
Finance Trust	100	115	115
Maryland Trust	100	108	110
Maryland Trust Pfd.	100	117½	118
Maryland Casualty	25	97½	97½
Mercantile Trust & Deposit	50	152	154
U. S. Fidelity & Guaranty	100	179	179

Miscellaneous Stocks.

Ala. Con. Coal & Iron	100	37½	50
Baltimore Electric Pfd.	46	46%	46%
Con. Cotton Duck Com.	50	2	2
Con. Gas. Elec. Lt. & P. Com.	100	108	110
Consolidation Coal	100	105½	106½
G.-B.-S. Brewing Co.	100	1½	2½
George's Creek Coal	100	3½	4
Mer. & Miners' Trans. Co. V. T.	100	72	72

Railroad Bonds.

Atlantic Coast 1st 4s	95½	95½	95½
Atlantic Coast Conv. Debent. 1st	102½	103½	103½
At. Coast. (Conn.) 4s. Cts.	200	92	92
Balto. & Annapolis S. I. 5s. Cts.	104	...	...
Carolina Central 4s.	93½	93½	93½
Charleston & West. Car. 5s.	107	107½	107½
Coal & Coke Railway 5s.	93½	95	95
Col. & Iron Railway 5s.	101½	102	102
Fla. Cent. & Penin. Con. 5s.	107½	108½	108½
Florida Southern 4s.	92½	93½	93½
Georgia & Alabama 5s.	107	107½	107½
Georgia, Car. & North. 1st 5s.	106	108½	108½
Georgia Pacific 1st 6s.	112½	...	...
Georgia Southern & Florida 1st 5s.	107	107½	107½
Macon, Dublin & Savannah 5s.	101	102½	102½
Maryland & Pennsylvania 5s.	89	90	90
New Orleans M. & Const. 5s.	93½	...	...
Richmond & Danville 6s.	104	105	105
Seaboard 4s. Stamped.	87½	88	88
Seaboard Refunding 4s.	82½	...	...
South Bound 5s.	107½	...	...
Suffolk & Carolina 5s.	102½	...	...
Virginia Midland 5th 5s.	106½	...	...
Wash. Balo. & Annap. 5s.	83½	83½	83½
Washington-Vandemere 4½s.	95½	97½	97½
Western Maryland 4s.	88	88½	88½
Wilmington & Weldon 4s.	95½	...	...
Wilmington & Weldon 5s.	110½	111	111

Street Railway Bonds.

Anacostia & Potomac 5s.	101	...	...
Atlanta Con. Street Railway 5s.	105	106	106
Augusta Railway & Electric 5s.	102½	...	...
Balto. Sp. Pt. & C. 4½s.	97	97½	97½
Baltimore Traction 1st 5s.	107	107½	107½
Central Railway (Balto.) Con. 5s.	107½	108	108
Charleston Con. Electric 5s.	94½	96½	96½
Citizens' Ry. Lt. & P. of N. N. 5s.	80	90	90
City & Suburban 5s (Balto.)	106	...	...
Fairmont & Clarkburg Trac. 5s.	100½	100½	100½
Knoxville Traction 5s.	107½	...	...
Lexington Railway 1st 5s.	94½	95½	95½
Macon Railway & Light 5s.	101	101½	101½
Maryland Electric Railways 5s.	99½	99½	99½
Metropolis 5s (Wash.)	97½	99	99
Metropolitan 5s (Wash.)	107½	108½	108½
Newport News & Old Point 5s.	98	99½	99½
Norfolk & Portsmouth Trac. 5s.	89½	90½	90½
Norfolk Railway & Light 5s.	100	100½	100½
Norfolk Street Railway 5s.	105	107½	107½
United Railways 1st 4s.	85½	85½	85½
United Railways Income 4s.	64½	64½	64½
United Railways Funding 5s.	87½	88	88
United Railways Notes 5s.	100%	100%	100%
Virginia R. & P. 5s.	96	96½	96½

Miscellaneous Bonds.

Ala. Con. Coal & Iron 5s.	84	86	86
Baltimore Brick 5s.	84	...	...
Baltimore Electric 5s. Stp.	98%	99	99
Carolina P. & L. 5s.	92½	...	...
Consolidated Gas 5s.	109	109½	109½
Consolidated Gas 4½s.	97½	...	...
Consolidation Coal Ref. 5s.	93½	94	94
Consolidation Coal Ref. 4½s.	92	93	93
Con. Gas. Elec. Lt. & P. 4½s.	200%	200%	200%
Fairmont Coal 1st 5s.	96½	96½	96½
G.-B.-S. Brewing 1st 4s.	28	40	40
G.-B.-S. Brewing Income 5s.	...	6	6
Mt. Vernon-Woodberry Cot. Duck 5s.	70½	77	77
United Elec. Lt. & P. 4½s.	95	95	95

SOUTHERN COTTON-MILL STOCKS.

Quotations Furnished by William S. Glenn, Broker, Spartanburg, S. C., for Week Ending March 11.	Bid. Asked.	
Abbeville Cotton Mills (S. C.)	75	75
Aiken Mfg. Co. (S. C.)	65	65
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Surplus and Net Profits 400,000

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Hopkins Place, German and Liberty Sts.

Capital \$1,000,000

July 15, 1908, Surplus and Profits \$671,631.60

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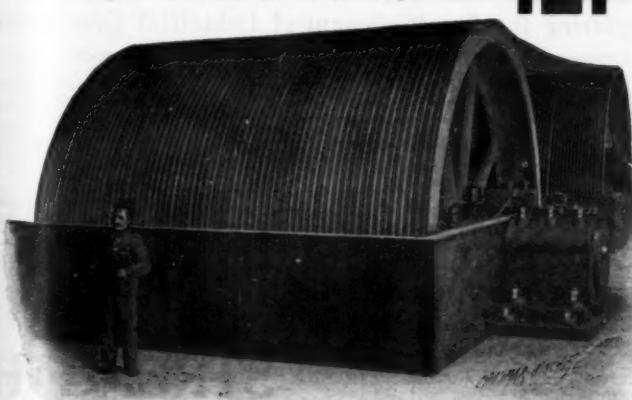
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DEPOSITS DEC. 31, 1909..... \$8,041,252.59

DEPOSITS DEC. 31, 1910..... 8,809,843.00

DEPOSITS DEC. 31, 1911..... 10,344,570.57

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OF BALTIMORE

CAPITAL \$1,500,000.00 SURPLUS \$3,000,000.00

been approved; capital \$25,000; D. M. Maxwell, correspondent, Monroeville; directors, J. I. Bizzelle, S. H. Tucker, I. B. Slaughter and J. M. Coxwell.

Ala., Autaugaville.—The Citizens' Bank of Autaugaville is reported to have filed articles of incorporation; capital \$15,000; incorporators, L. D. Hicks, W. L. De Bardeleben, P. E. Alexander and others.

Ga., Atlanta.—The Atlanta Loan Guaranty Co., capital \$25,000, is reported incorporated by C. Mortimer Mason and Gordon Hiles.

Ga., East Point.—Official: The Citizens' Bank will begin business about March 20 with \$50,000 capital. Officers: B. M. Blount, president; Garnett McMillan, vice-president, and Byron S. Huie, cashier.

Ga., Juliette.—An official letter confirms the report that a new bank is being organized. E. M. Williams is interested.

Ga., Macon.—The Macon National Bank is reported being organized; capital \$800,000; directors, Robt. G. Jordan, correspondent, Macon, Ga.; R. F. Lawton, J. B. Hart, L. A. Shepherd and J. L. Jessup.

Ga., Register.—Reported chartered: Farmers' State Bank of Register; capital \$25,000; incorporators, F. P. Register, John G. Nevil, C. A. Warnock, J. S. Riggs, J. L. Johnson, C. C. Daughtry and B. R. Olliff.

Ky., Louisville.—The Equity Security Trust Co., authorized capital \$100,000, is reported to have filed articles of incorporation. Incorporators: E. H. Canada, W. R. Lyon and C. G. Hamson.

La., Iota.—Steps are reported being taken to organize a bank with \$25,000 capital.

La., Monroe.—The Union National Bank is reported chartered; capital \$200,000; W. R. Mitchell is president; Victor C. Barringer and Percy Sandel, vice-presidents, and H. D. Apgar, cashier. This is a conversion of the Union Bank & Trust Co.

La., McDonough.—The McDonough Home- stead Association, capital \$5,000,000, with office at 738 Union St., is reported organized with Joseph M. Cousins, president; Joseph Silex, first vice-president, and Paul B. Pardee, second vice-president; Rolla A. Tichener, attorney, and Gus A. Llamblas, notary. Alphonse C. Martinez is secretary-treasurer.

La., Shreveport.—Official: The First Savings Bank & Trust Co. chartered; authorized capital \$500,000; paid up \$100,000. Business is expected to begin in about two or three months. A. Querbes will be president and A. H. Chalk cashier.

La., Washington.—The Farmers' Bank & Trust Co. will, it is reported, soon begin business; capital \$100,000. J. Franklin Schell, J. M. Fretchy, M. L. Trout and J. H. Ratton are said to be interested.

Md., Baltimore.—The Guilford Building and Loan Association incorporated by Thos. Tongue, Norman T. Nelson and George B. Oehm.

Miss., Greenville.—Lake's East End Bank, capital \$35,000, is reported organized by E. H. Lake and T. G. Lake. Regarding the foregoing, Mr. H. H. Lake writes that he and others expect to open a bank in about 60 days with an authorized capital of \$30,000.

Miss., Iuka.—Reported chartered: First National Bank of Iuka; capital \$25,000. A. L. Jagoe will be president and L. T. Gaines cashier.

N. C., Charlotte.—Mr. John A. Darwin of Athens, Ga., according to press dispatches, proposes organizing a life insurance company

with \$100,000 capital and \$50,000 reserve fund. Among those said to be interested are W. C. Dowd, A. G. Brenizer, A. M. McDonald, W. L. Nicholson, J. A. Durham, H. M. Victor, W. H. Wood, Heriot Clarkson and J. L. De Laney.

N. C., Gastonia.—The Home Building and Loan Association is reported being organized by Col. C. B. Armstrong, W. T. Rankin, R. Grady Rankin and others.

N. C., Raleigh.—Official: The Anchor Trust Co. incorporated; capital \$100,000; surplus \$10,000. Officers not yet elected. Business is expected to begin about June 1. Albert Cox and others are interested.

N. C., Selma.—Reported chartered: People's Bank of Selma; authorized capital \$50,000. Incorporators: L. D. Debnam, W. A. Green, Dr. J. A. Griffin, W. B. Driver, H. B. Pearce, Sr., E. W. Richardson, LeRoy Goldberg, R. M. Nowell, E. G. Richardson, J. W. Futrell, R. E. Richardson, F. B. Whitley, C. W. Horne and others.

Okla., Cleveland.—Official: The Fidelity State Bank chartered; capital \$15,000. J. P. Martin is president; Howard Hannah, vice-president; L. E. Stevenson, cashier; directors, R. L. Irwin, J. Carl Smith, Ola J. Rodgers, J. P. Martin, L. E. Stinson and Howard Hannah. Business began March 4.

Okla., Edmond.—Official: The Citizens' National Bank, which represents a consolidation of two State banks, is chartered with \$25,000 capital. Directors, W. H. Tuttle, president; H. W. Granzow, E. A. Bender, G. H. Flack and Elmer Griffin. Business began March 4.

Okla., Laverne.—Official: The Laverne State Bank chartered and incorporated; capital \$10,000; J. S. Earle, Woodward, Okla., president; R. H. Ross, Murray, Okla., vice-president; E. F. Gill, Laverne, Okla., cashier, and M. O. Murphy of Woodward, director. Business is about to begin.

Okla., Idabel.—The Southern Oklahoma Abstract Co., capital \$1500, is reported incorporated by H. McBride, B. L. Laden, Luther Calahan, Hose C. Perkins, all of Idabel.

Okla., May.—Official: The May State Bank, capital \$10,000, is reported chartered. Directors: C. H. Martin, president, Woodward; V. B. Browne, vice-president and cashier, May, Okla.; R. O. Allen, S. T. Morey and W. R. Phillips, all of May. Business began February 20.

Okla., Tuttle.—The Farmers' State Bank, capital \$15,000, is reported incorporated by J. D. Burrows, W. S. Bunting of Tuttle and Willard C. Row of Oklahoma City.

Okla., Vici.—Reported chartered: Bank of Vici; capital \$10,000. Incorporators, F. C. Hoyt, John F. Windolph, Cestos; Jerry Dick, Vici; William F. Donahue and W. E. Jaquith, Seling.

Tenn., Decherd.—The Citizens' Bank & Trust Co. is reported organized with a local capital of \$20,000. Business is expected to begin about April 1; directors, D. M. Powell, president, and E. H. Ashcraft, cashier; C. E. Murray, J. L. Haynes, C. O. Ellis, R. J. Hessey, P. L. Williams and Wm. Ikard.

Tenn., Leiper's Fork.—The new bank at Leiper's Fork is reported to have begun business with B. H. Hunter as president and W. L. Pinkerton, cashier.

Tenn., Knoxville.—The American Bank & Trust Co. is reported organized with \$50,000 capital. Among those interested are W. H. Sterchi, J. W. Saylor, John C. Carter, E. G.

Wright, J. R. Penland, J. H. Garrard and W. R. Dodson.

Tenn., New Tazewell.—The Citizens' Bank is reported incorporated with \$12,000 capital by J. C. J. L. and W. E. Buls, J. K. Pratt and A. B. Ritchie.

Tenn., Sharon.—Official: The Farmers and Citizens' Bank is being organized with \$60,000 capital. Officers not yet elected. Business is expected to begin about June 1.

Tex., Austin.—The Texas Trust Co. will, it is reported, begin business April 1 with officers thus: President, Sam Sparks; vice-president, Geo. Walling, Jr.; secretary-treasurer, H. A. Turner; directors, E. P. Wilmot,

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References—Any Bank in Savannah

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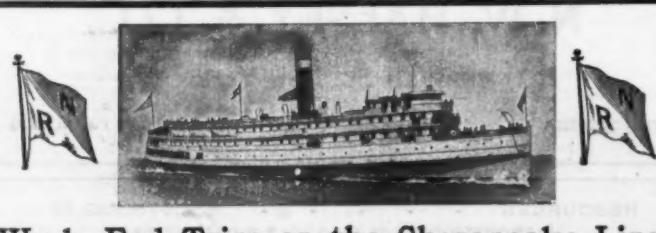
Capital and Surplus - - - \$1,200,000

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Austin National Bank; H. A. Wroe, American National Bank; Chester Thrasher, Citizens' Bank & Trust Co.; Walter Bremond, State National Bank; J. Z. Miller of Kansas City, Mo.; H. E. Ford, N. A. Stedman and C. P. Ledbetter of Austin, and Carl Nelson of Round Rock.

Tex., Artell.—The First State Bank, capital \$10,000, is reported incorporated by W. Warwick, W. M. Nickels, Ed Savage and others.

Tex., Bonita.—The First National Bank of Bonita is reported approved; capital \$25,000. G. H. Camp, correspondent. This succeeds the Bonita State Bank.

Tex., Houston.—The Penn Brokerage Co., capital \$6000, is reported incorporated by J. H. Conover, H. B. Conover, L. D. Cory and others.

Tex., Houston.—The South Texas Commercial Bank is reported chartered; capital \$1,000,000; W. B. Chew, president; B. D. Harris, cashier.

Tex., Mertens.—Official: The Guarantee State Bank chartered; capital \$10,000; Will M. Farlen, president; W. H. Ferguson, active vice-president; R. O. Hooks, cashier, and J. W. Langford, second vice-president. Business to begin immediately.

Tex., Pharr.—Reported approved: First National Bank of Pharr; capital \$25,000. Houston Jones, correspondent.

Tex., San Antonio.—Official: The Mexico-Texano Bank & Trust Co., capital \$500,000, is incorporated; directors, M. Dahlgren, president; Jose Asunzolo, vice-president; J. G. Griner, secretary, and M. A. Esteva, D. R. Davila, Ed. Walker and J. L. Asunzolo. Offices are in the Moore Building.

Tex., San Antonio.—The Merchants and Mechanics' Bank, 1301 W. Commerce St., will, it is reported, begin business March 15. W. B. Pettus will be cashier.

Tex., San Antonio.—Official: The Gross National Bank, which succeeds the private bank of Gross & Co., is chartered with \$250,000 capital; Franz C. Gross, president; A. W. Guenther, vice-president; Chas. Duessen, cashier, and Ferd. Gross, assistant cashier; directors, A. W. Guenther, I. S. Kampmann, C. H. Kearny, C. A. Goeth, Chas. Duessen and Franz C. Gross. Business began March 1.

Tex., Waco.—The American Loan & Trust Co. is reported being organized with \$50,000 capital by J. D. Newton and others.

Tex., Weimar.—The T. A. Hill State Bank, succeeding the T. A. Hill private bank, is reported organized with \$40,000 capital. Officers, T. A. Hill, president; George Herder, Sr., first vice-president; John C. Hubbard, second vice-president; R. L. Williams, cashier; T. A. Hill, George Herder, John C. Hubbard, William Hillje and W. A. Van Alstyne, directors. The bank expects to begin business about March 20.

Va., Danville.—Reported chartered: Virginia National Bank of Danville; capital \$100,000. W. W. Williamson is president; J. M. Ley, cashier. This is a conversion of the Virginia State Bank of Danville.

NEW SECURITIES.

Ala., Greensboro.—Official: Bids will be opened at the April term Commissioners' Court, 1912, commencing the first Monday, for \$100,000 of 30-year Hale county road-improvement bonds voted February 6, 1912; interest not exceeding 5 per cent.; denomination \$1000; dated July 1, 1912. Address W. C. Christian, Probate Judge.

Ala., Selma.—March 25, it is reported, election will be held to vote on \$35,000 of school bonds.

Ala., Stevenson.—Reported voted: \$14,500 of water-works bonds.

Ark., Harrison.—Reported that \$20,000 of school bonds have been sold.

Ark., Jonesboro.—Reported that \$40,000 of 10-year high-school bonds have been authorized by the School Board.

Ga., Cedartown.—April 8, it is reported, an election is to be held to vote on \$20,000 of street-paving bonds.

Ga., Cochran.—An election was held March 18, it is reported, to vote on \$20,000 of 5 per cent. 30-year school-building bonds; denomination \$1000; dated July 1, 1912. J. E. Cook is clerk and treasurer and J. H. Mullis, Jr., Mayor.

Ga., Macon.—Notice is given that bids will be received until noon April 8 for \$50,000 of 4 1/2 per cent. water-works bonds. Denomination \$1000. This is part of a total issue of \$900,000 of water-works bonds voted March 18, 1911, and dated July 1, 1911. Address Board of Water Commissioners, W. H. Fetter, chairman.

Ga., Marietta.—May 15, it is reported, an

election is to be held to vote on \$20,000 of 5 per cent. school bonds. D. W. Blair is chairman, Board of Education.

Ky., Barbourville.—Official: Bids will be received until noon March 23 for \$17,500 of 5 per cent. 10-20-year high-school bonds. Address Thomas D. Tinsley, president board of trustees.

Ky., Barbourville.—Reported that bids will be received until noon March 23 by Thos. D. Tinsley, president, School Trustees, for \$17,500 of 5 per cent. 10-20-year high-school bonds.

Ky., Louisville.—An official letter says that an act is pending in the General Assembly enabling the city to vote on a bond issue for sewers and schools. If it passes vote cannot be taken until November, 1912. S. M. Wilhite is City Comptroller.

La., Coushatta.—An election is to be held in Red River parish April 16, it is reported, to vote on \$75,000 of 5 per cent. 10-year courthouse and jail bonds.

La., Gretna.—The Hibernia Bank & Trust Co. is reported to have purchased \$50,000 of Jefferson parish road bonds.

La., Morgan City.—An official letter confirms report that \$80,000 of 5 per cent. 40-year water and sewer bonds were purchased by Bolger, Mosser & Willaman at par and interest plus premium of \$328. Denomination \$500. Dated January 15.

La., St. Bernard.—According to press dispatches, the Hibernia Bank & Trust Co. of New Orleans has purchased \$50,000 of road bonds of St. Bernard parish.

Md., Annapolis.—A bill has been introduced in the Senate providing for the issuing of \$4,300,000 of State road bonds. Murray Vandiver is treasurer.

Miss., Biloxi.—The Interstate Bank & Trust Co. of New Orleans is reported to have purchased \$70,000 of school bonds. The same company recently purchased \$50,000 of school bonds.

Miss., Ellisville.—An election is to be held in Jones county, it is reported, to vote on \$25,000 of bonds for buildings at the County Agricultural High School.

Miss., Indiana.—Official: The Wm. R. Compton Bond & Mortgage Co. purchased on March 5, at par, \$65,000 of the \$72,000 of 6 per cent. 11-20-year drainage bonds; dated May 1, 1912; denomination \$500. D. M. Quinn is attorney for the district.

Miss., Leakesville.—The Board of Supervisors of Greene county is reported to have under consideration the question of issuing \$25,000 of 5 per cent. 10-year road bonds.

Miss., Meridian.—Reported that an election is to be held to vote on \$300,000 of railroad-aid bonds. An official letter says bonds will not be issued until railroad is completed. J. W. Parker is Mayor.

Miss., Meridian.—Reported voted: \$25,000 of independent school-building bonds.

Miss., Tupelo.—Official: Voted March 1: \$50,000 of 6 per cent. Guntown District, Lee county, good-roads bonds; date of opening bids not yet decided. Address John M. Witt, Clerk.

Miss., Waynesboro.—Reported voted: \$16,000 of school bonds.

Mo., Doniphan.—Reported voted: \$16,500 of water and sewer bonds.

Mo., Jefferson City.—Official: \$232,500 of the \$3,500,000 of 3 1/2 per cent. 8-13-year State Capitol building bonds have been sold at par; dated January 1, 1912; denomination \$1000, except half million of \$500. Address Board Fund Commissioners, Jefferson City.

Mo., Joplin.—Official: City proposes to issue \$30,000 of 5 per cent. market bonds; denomination \$500. Address C. A. Robinson, City Clerk. J. Osborne is Mayor.

Mo., Lamont.—Reported voted: \$5000 of city hall bonds.

Mo., Oak Grove.—An election is to be held, it is reported, to vote on \$15,000 of school bonds.

Mo., Springfield.—Emery, Peck & Rockwood of Chicago are reported to have been awarded the \$100,000 of sewer-improvement bonds at \$3180 premium and cost of printing the bonds.

N. C., Charlotte.—Press dispatches state that bids will be opened on April 8 for \$150,000 of sewer and \$100,000 of paving 4 1/2 per cent. 30-year bonds; dated July 1, 1912; denomination \$1000. Address E. W. Thompson.

N. C., LaGrange.—Official: Defeated: \$30,000 of municipal improvement bonds. Alex. Sutton is Mayor.

N. C., Ashboro.—April 8, it is reported, elections are to be held in Randolph county townships to vote on railroad aid bonds as follows: Brower township, \$10,000; Grant township, \$10,000; Ashboro township, \$40,000; Randaleman township, \$30,000; New Market township, \$10,000.

N. C., Liberty.—Official: Bids were opened March 10 for \$8500 of 5 per cent. 20-year graded school district bonds; denomination \$500; dated February 5, 1912; maturity February 5, 1932. James H. Johnson is chairman of the School Board.

N. C., Monroe.—Official: March 23 an election is to be held in Union county to vote on \$200,000 of road-improvement bonds. J. E. Stewart is clerk to board.

N. C., Morehead City.—Reports state that Farson, Son & Co. of Chicago have been awarded \$15,000 of 5 1/2 per cent. 30-year funding bonds. R. N. Aycock is City Secretary.

N. C., Newbern.—Bids will be received until noon April 2 for \$50,000 of 5 per cent. 20-year bonds issued for the legitimate necessary expenses of the city. Address F. T. Patterson, City Clerk.

N. C., Newton.—Reported voted: \$50,000 of Catawba county good-roads bonds.

N. C., Salem.—Official: Baker, Watts & Co. of Baltimore have purchased \$65,000 of the \$75,000 of 5 per cent. 30-year municipal improvement bonds voted last December.

N. C., Weldon.—Official: Woodin, McNear & Moore, Chicago, were awarded at \$42,415 the \$40,000 of 6 per cent. 10-20-year water-works and sewerage bonds; denomination \$1000; dated July 1, 1912; W. W. Wiggins is Mayor.

Okl., Oklahoma City.—Official: Bids were received until 1:30 P. M. March 12 for \$100,000 of water and \$250,000 of park 5 per cent. 25-year bonds; dated February 15, 1912; maturity February 15, 1937; optional after 10 years. Address C. R. Goucher, City Clerk.

Okl., Stigler.—April 2, it is reported, an election is to be held to vote on \$25,000 of bonds for purchasing local light plant.

S. C., Columbia.—An election is to be held in South Carolina, it is reported, to vote on \$1,000,000 of bonds for improvements to State Insane Asylum.

S. C., Dillon.—Official: W. N. Collier & Co. of New York have purchased \$100,000 of Dillon county highway-improvement bonds.

S. C., Florence.—Steps are reported being taken to hold an election to vote on \$35,900 of electric-light-plant and \$117,000 of water-works-plant bonds.

Tenn., Chattanooga.—Official: March 26 an election is to be held to vote on \$250,000 of 4 1/2 per cent. 30-year bonds. Nathan L. Bachman is City Attorney.

Tenn., Dickson.—Official: H. C. Speer & Sons Company, Chicago, Ill., were awarded the \$15,000 of 30-year school bonds; interest 5 per cent. John M. Smith is Mayor.

Tenn., Livingston.—Official: Voted: \$150,000 of 5 per cent. 40-year Overton county good-roads bonds, which are to be sold at an early date.

Tex., Austin.—The Attorney-General is reported to have approved securities as follows: \$128,000 of water-works and \$50,000 of water-works improvement 5 per cent. 20-40-year bonds of Cleburne.

Tex., Carrizo Springs.—Official: Voted February 20: \$6000 of 5 per cent. 40-year street-improvement bonds; denomination \$1000; date of opening bids not yet determined. Address Mayor or City Clerk.

Tex., Clarendon.—March 30, it is reported, an election is to be held in Clarendon independent school district to vote on \$25,000 of school bonds.

Tex., Cuero.—April 2, it is reported, an election is to be held to vote on \$25,000 of sewer bonds.

Tex., Decatur.—Reported that \$18,000 of water, light and power bonds have been sold. H. L. Ward is Mayor.

Tex., Denton.—April 9, it is reported, an election is to be held to vote on \$3000 of schoolhouse-improvement bonds.

Tex., Honey Grove.—April 12, it is reported, an election is to be held to vote on \$19,000 of high-school-building bonds.

Tex., Houston Heights.—April 6, it is reported, an election is to be held to vote to on \$75,000 of 5 per cent. 30-year school-improvement bonds.

Tex., Kerrville.—A St. Louis (Mo.) company is reported to have purchased at par and accrued interest \$20,000 of schoolhouse bonds.

Tex., Lewisville.—Official: J. H. Wood of Dallas, Tex., has purchased \$76,000 of Denton county road-improvement bonds. S. H. Hoskins is County Judge.

Tex., Palestine.—Official: H. C. Speer Sons & Co., Chicago, recently purchased at par \$150,000 of 5 per cent. 20-40-year bonds of road district No. 1, Anderson county, voted last November. Denomination \$1000. Address County Judge.

Tex., San Angelo.—The Commissioners' Court, according to press dispatches, has been petitioned to issue \$70,000 of vindict bonds.

Tex., San Benito.—April 6 an election is to be held to vote on \$30,000 of sewer and \$18,000 of street-improvement bonds. Bruce Frazier is City Secretary.

Tex., Smithville.—April 2, it is reported, an election is to be held to vote on \$100,000 of bonds of road precinct No. 1, Bastrop county.

Tex., Sterling City.—St. Louis bankers are reported to have purchased \$10,000 of Sterling county courthouse bonds.

Tex., Texarkana.—March 28, it is reported, an election is to be held in Bowie county to vote bonds for building levees along the Red River in levee district No. 1.

Tex., Waco.—Official: April 2 an election is to be held to vote on \$420,000 of 5 per cent. 30-year water and fire bonds; denomination \$1000; dated July 1, 1912. Address A. B. Mistray, Mayor.

Tex., Winona.—Reported voted: \$8000 of school-building bonds.

Va., Fredericksburg.—Reported that election will soon be ordered to vote on \$30,000 of street-improvement bonds.

Va., Lexington.—The Equitable Life Insurance Company of New York is reported to have purchased \$65,000 of 4 1/2 per cent. of Moores Creek water-improvement bonds.

Va., Manassas.—According to press dispatches, elections will probably be held in magisterial districts of Prince William county as follows: Manassas, \$35,000; Brentsville, \$15,000; Gainesville, \$15,000, and Ocoquan, \$5,000.

Va., Stafford.—An election is to be held in Stafford county, it is reported, to vote on \$60,000 of road-improvement bonds.

W. Va., Bethany.—Bids will be received until 7 P. M. March 16, it is reported, for \$4000 of 5 per cent. 10-34-year street-improvement bonds; denomination \$100; dated April 1, 1912.

W. Va., Ceredo.—Steps are being taken to issue \$7500 of 6 per cent. 10-25-year independent school district bonds; dated April 1, 1912; maturity April 1, 1927; denomination \$500. A. G. Holt is president Board of Education of the Independent School District of Ceredo.

W. Va., Gassaway.—Ulen & Co., Chicago, are reported to have purchased \$15,000 of 6 per cent. 10-20-year bridge bonds at \$607 premium.

W. Va., Lewisburg.—Reported that White Sulphur District, Greenbrier county, has voted \$20,000 of high-school bonds.

W. Va., Mannington.—Reported that an election is to be held to vote on \$250,000 of permanent road-improvement bonds.

W. Va., Milton.—Reported voted: \$10,500 of water-works bonds.

W. Va., White Sulphur Springs.—Official: Voted March 2: \$20,000 of 6 per cent. 20-year high-school bonds; denomination \$1000; dated May 15, 1912; maturity 1932. G. L. Wyatt is president Board of Education of White Sulphur District.

W. Va., St. Albans.—Official: Bids will be opened April 2 for \$17,000 of 5 per cent. 34-year independent school district building bonds; denomination \$500; dated May 1, 1912; maturity May 1, 1946. Address Will M. Wood, secretary School Commissioners.

FINANCIAL NOTES.

The Florida Bankers' Association will hold its annual meeting at Key West April 4 and 5.

The First State Bank of Mount Pleasant, Tex., is reported to have increased its capital from \$25,000 to \$50,000.

The Savannah Bank & Trust Co. of Savannah, Ga., is reported to be doing business in its new home at Bull and Bryan Sts. William F. McCauley is president.

The Merchants & Planters' Bank of Warren, Ark., is reported to have filed an amendment to its articles of incorporation, changing its name to the Merchants & Planters' Trust & Savings Bank.

According to press dispatches, the South Texas National and the Commercial National Banks, both of Houston, Tex., have been consolidated under the name of the South Texas Commercial National Bank, with \$1,000,000 capital. W. B. Chew is president.

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medium-
heavy
traffic
and
residential
streets.

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The Dollarway Pavement can be resurfaced when necessary at a price of from ten to twenty cents per square yard, thus making it as good as new and prolonging its life indefinitely.

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Permanent, non-slippery, noiseless and dustless. Not affected by motor traffic. Ideal for the smaller cities, as no expensive machinery is required.



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Correspondence solicited from contractors to represent Dollarway Pavement for unallotted territory.

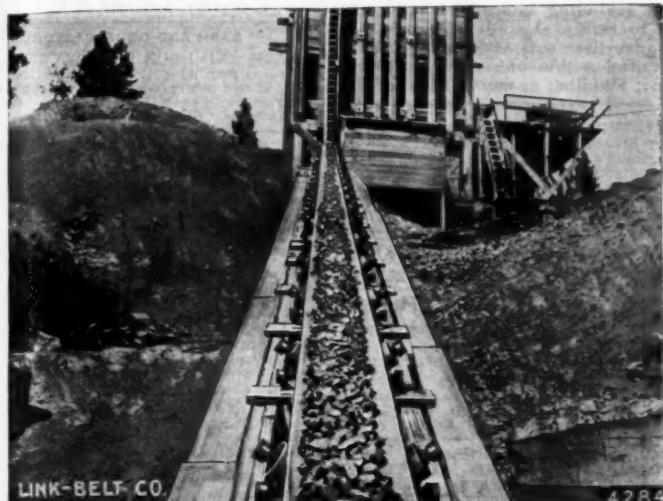
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PITTSBURGH, 1501-3 Park Building
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Baltimore, Md.

Cincinnati, O., Feb. 7, 1912.

Gentlemen:—
We have your favor of the 6th inst. in regard to the matter of Manufacturers Record, and are very glad to be honestly able to say that the information contained in your magazine as to new buildings, incorporations, enterprises and general wants has proven very valuable to us in the past.

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Classified Opportunities

MEN WANTED

HIGH-GRADE SALESMEN having acquaintance among large manufacturers will hear of side line paying liberal commission; no samples required. Address "Allen," Box 663, Cincinnati, Ohio.

WANTED—Traveling or local men; all sections of the country; profitable side line; commission or salary; good men average \$100 weekly. For particulars address The Sun Chemical Company, Richmond, Va.

WANTED—Office manager for wholesale hardwood and yellow-pine lumber, with headquarters in Philadelphia; prefer man who can invest some money in the business; good salary to right man. Address No. 975, care Manufacturers Record.

WANTED—Good business man with \$5000 to \$10,000 to take position secretary-treasurer and manager financial end of well-established manufacturing business. Salary will be satisfactory. Address P. O. Box No. 282, Charlotte, N. C.

WANTED—Manager for sash, door and blind factory and planing mill; must have some capital; factory already established, but owners want experienced manager-partner. Write J. E. Schumpert, Prest., Vidalia, Ga.

WANT SALES MANAGER to take charge of wholesale department for a manufacturing firm located in Tennessee to handle hardwoods and yellow pine; party must have five to ten years' experience and be willing to put \$5000 to \$10,000 in the business; wanted at once. Write us and we will furnish you full details. Address No. 973, care Manufacturers Record.

AGENCIES WANTED

THE QUEEN CITY BUILDERS' SUPPLY CO. of Shreveport, La., requests manufacturers of building material and specialties, who desire representation in North Louisiana, to correspond with them. P. O. Box 671.

SITUATIONS WANTED

AN EXPERT, practical and executive manager of sheet-metal stamping and drawing, designer of special machinery and dies. Address No. 977, care Manufacturers Record.

BOOKKEEPER, thoroughly experienced in corporation accounting, cost finding, and systematizing in cotton-manufacturing business, desires position of office manager or accountant; best references. Address No. 946, care Manufacturers Record.

HIGHWAY ENGINEER, 17 years' experience, will be open for engagement about April 1; macadam, gravel and sand-clay roads a specialty; or will act in a consulting capacity, making examinations of materials, surveys, plans and specifications; New York State experience. Address No. 955, care Manufacturers Record.

CHEMICAL AND MECHANICAL ENGINEER with electrical experience wants position and possibly investment with prosperous going company; has had manufacturing and sales experience; 10 years superintendent of factory employing 50 men, and lastly manager of department in large machinery house; good references. Address No. 975, care Manufacturers Record.

CIVIL AND CONSTRUCTING ENGINEER wants position with bridge contractor, general contractor and builder, construction company, railroad or power-development company; will consider position as sales engineer for good line; technical graduate; 13 years' experience; good references. Address No. 962, care Manufacturers Record.

EDUCATIONAL

RENSSELAER POLYTECHNIC INSTITUTE, TROY, N. Y.—Courses in Civil, Mechanical and Electrical Engineering, and General Science, leading to the degrees of Civil Engineer (C.E.), Mechanical Engineer (M.E.), Electrical Engineer (E.E.), and Bachelor of Science (B.S.). Special courses in engineering and science. Splendidly equipped new engineering laboratories. Send for catalogues to Registrar.

BANKS

THE PALMETTO NATIONAL BANK, Columbia, S. C., capital \$250,000, solicits accounts of banks, firms, corporations and individuals, either commercial or savings accounts.

FLORIDA HOTELS

THE WINDSOR HOTEL, Jacksonville's finest and Florida's largest and best year-round hotel. Rates reasonable. American and European plan. Operating the finest European grillroom in the South. Thomas M. Wilson, proprietor.

CAPITAL WANTED

IF YOU HAVE MONEY TO LOAN we are in position to get the very best security and interest. Write us. Wells Land Co., 510-12 Curry Bidg., Tampa, Fla.

A NEW, modern manufacturing plant, with paid-in capital stock of \$50,000, with more orders than can fill, desires to increase capacity to take care of same, and is offering \$50,000 of additional capital stock for sale; highest references; fullest investigation shown; manufacturing a most profitable line. Address No. 976, care Manufacturers Record.

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 24 lines. Allow seven words per line. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year, as follows: 100 lines, 18c. per line; 300 lines 16c. per line; 500 lines or more, 15c. per line.

MANUFACTURING CONCERN with established business wants \$60,000 additional capital; would not object to working partner; situated in mountains of North Carolina; ideal climate and situation. Address No. 954, care Manufacturers Record.

PRACTICAL MAN, with several years' experience in burned-clay products, wishes to interest capital in the establishment of a plant in the Birmingham district; can furnish a magnificent site of ten acres with free water and good railroad facilities; no experiment; will bear the closest investigation; the territory to be covered includes several States; also a very promising export business; promoters not wanted. Address "Clay," 310 N. 21st street, Birmingham, Ala.

WANTED—One or two parties to take \$5000 or \$10,000 or more stock, with position, in a \$30,000 company to manufacture beautiful cream-colored building and fire brick; inexhaustible supply of clay and fuel, and great demand for all the brick and tiling that can be made. The capital should double itself every year. Address T. E. Allen, 1228 and 1230 Stahlman Bidg., Nashville, Tenn.

BUSINESS OPPORTUNITIES

RELIABLE, accurate and definite information regarding the possibilities for investment in high-grade land propositions in Mississippi and Louisiana; fourteen years' successful operation; references exchanged. Walter G. Hodges, Meridian, Miss.

NOTICE TO MANUFACTURERS.—We want catalogs and jobbers' prices on the following: Carpets, furniture, queensware, sporting goods, cut glass, silverware, clocks, watches, jewelry, musical instruments, lamps, sewing machines, dolls, lace curtains and toys. American Manufacturing Co., Lexington, Tenn.

FOR SALE—220-acre dairy farm in Hill country; produces 900 pounds butter monthly; all necessary machinery for creamery; owner leaving the States. Price \$23,000. Be quick. Ritter-Stern Realty Co., Dallas, Texas.

WANTED—Man or men with practical experience to establish woodworking plant to manufacture novelties. To such men will give assistance. Plenty of cheap timber, good transportation facilities and natural gas for fuel. Address Secretary, Box 67, Poteau, Oklahoma.

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ATTENTION, MANUFACTURERS!—A gentleman of wide business experience expects to spend a year on Pacific coast from Vancouver to San Francisco; would like to represent some reliable manufacturer in any line that can be sold to advantage in that territory; highest references given as to character, ability and push. This ad. will appear but once. Address No. 979, care Manufacturers Record.

TO A PRACTICAL HANDLE MAN, who is well recommended, we will sell on such easy terms that he can pay for it from the earnings of the plant, an up-to-date plant for making hickory tool handles, singletrees, neckyokes, broom handles; well equipped with an abundant supply of available timber. Address No. 890, care Manufacturers Record.

FRESH STOCK OF DRUGS, involving between \$6000 and \$8000, in a fast-growing town of 4000 inhabitants within 50 miles of Memphis, Tenn.; business is on most prominent corner of city; only two other drug stores, this one doing at least 50 per cent. of all the business; owner has made comfortable fortune and desires to retire; annual sales, \$18,000; no cut prices; will sell at invoice price; business will pay for itself in two years; will bear closest investigation. Chattanooga Realty & Development Co., Chattanooga, Tenn.

LAND AT AUCTION OUR SPECIALTY. We subdivide land into town lots, or large farms into small tracts, and sell at auction. We do vigorous, up-to-date advertising, and, with our force of auctioneers, advertisers and ground men (the best in the South), we get the best results possible, and get it quick. We sell in ten States. If you want to convert your property into cash and interest-bearing notes, write or wire us. E. M. Andrews, Manager Southern Realty & Auction Co., Greensboro, N. C.

Rate 20 cents per line per insertion. Minimum space accepted, four lines. Maximum space accepted, 24 lines. Allow seven words per line. Terms: Invariably cash with order; check, postoffice or express order or stamps accepted. No display type used. Questionable or undesirable advertisements will not be accepted. The assistance of our readers in excluding undesirable advertisements is requested. We reserve the right to refuse any advertisement. No patent medicine, whiskey or mining stock advertisements accepted. Rate for special contracts covering space used as desired within one year, as follows: 100 lines, 18c. per line; 300 lines 16c. per line; 500 lines or more, 15c. per line.

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WANTED—One thousand business men in every State in the Union to send for circular of Lorand's "Old Age Deferred"; tells how to keep young even if old; 3000 sold to bankers alone; 500 pages; \$2.50 net. F. A. Davis Company, Publishers, 1514 Cherry St., Philadelphia, Pa.

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MAPS OF TEXAS COUNTIES.—We make blueprint maps of nearly all Texas counties and several Louisiana parishes. Write for prices on those desired. Singleton Bryan & Co., Beaumont, Texas.

TYPEWRITERS

IF YOU are interested in purchasing a high-grade typewriter and do not care to invest \$100 asked by the manufacturers, we would like you to investigate our remanufactured machines. Three days' trial allowed. Enterprise Exchange, Inc., 609 E. Baltimore street, Baltimore, Md.

FACTORY SITES

FREE—For manufacturing site, five or more acres railroad front, a part of 838 acres, 20 miles from Charlotte; S. A. L. R. R.; will sell all. G. B. Caldwell, Monroe, N. C.

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CREAMERY Imperatively needed at Norfolk, Va., where lands, price, demand, importations, health requirements, climate and other conditions offer unsurpassed advantages. Write for details to Jordan & Davis Company, Norfolk, Va.

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LAREDO, TEXAS, wants a tourist hotel, cement factory, up-to-date educational institution, down-the-river railroad. Laredo has best coal Texas, natural gas, equable climate, abundant water, labor. In citrus fruit district. Address Board Trade.

WANTED—Men with capital to take active working interest in existing enterprises in Asheville and to establish new industries here; good locations for woodworking plants, especially stave mills. Write quick. Board of Trade, Asheville, North Carolina.

WANTED—Enterprises; splendid distributing point; railroads in all directions; electric power; wonderful development; right inducements for right kind. It can be made for less in Spartanburg. Address Chamber of Commerce, Spartanburg, S. C.

VICTORIA, TEXAS, head of navigation of Guadalupe River; center of cotton, corn, truck and citrus fruit-growing district of South Texas; country rapidly developing; opportunities for many industries. If interested in the coastal section of Texas, write for booklet "D" to the Secretary of the Progressive League.

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FOR SALE—Handle and singletree plant, well equipped, where there is an abundance of available timber to last for many years. Address No. 900, care Manufacturers Record.

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VENEER PLANT FOR SALE.—Located on the Oconee River, in city of Dublin, Ga.; is one of the best built and equipped veneer plants in the South; truss construction; cement and brick foundations; concrete vats; steam cut-off saw; short log sawmill; one 100' lathe; one 75' lathe; one 100' grinder; two clippers; one 8'x100' Coro roller dryer; plant covered with galvanized iron; fireproof boiler-house, and over 4000 acres of fine timber, oak, gum, pine, cypress, hickory, etc.; fine shipping point; four railroads. This plant is new and will be sold at a bargain. It will pay you to correspond with F. M. Smith, Receiver, Dublin, Georgia.

ROTARY VENEER PLANT

ROTARY VENEER PLANT, completely equipped with best Coro machinery and dryer, for sale or lease at a big bargain. Address Geo. A. Murray, Asheville, N. C.

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SASH AND DOOR FACTORY FOR SALE in rapidly-growing Georgia town; net profit \$15,000; \$2000; owner wishes to retire; will sell for \$7500; half cash; balance terms. Write for particulars. Johnson & Trimble, Bowdon, Ga.

SASH, DOOR AND BLIND FACTORY

SASH, DOOR AND BLIND PLANT. I will sell at public outcry on Monday, March 25, 1912, at 12 o'clock noon, at the plant of the Woodward Mfg. Co., Augusta, Ga., all the buildings, machinery, fixtures, and other property belonging to said plant. This is a medium-sized plant with complete set of modern sash and door machinery.

Parties interested can obtain any information desired from the undersigned. Terms cash. George E. Toale, Trustee in Bankruptcy, Augusta, Ga.

SAW MILL

FOR SALE—March 21, 1912, at 2 P. M., 3 short-log mills; 1 7-inch saw edger; 1 rip-saw table; 2 cut-off saw tables; 1 10-inch saw trimmer and saws; 1 50-inch fan and pipes; 1 80-horse-power boiler; 1 60-horse-power engine; shafting, belts, etc. Virginia Box & Column Co., J. W. Bobbitt, Trustee, Altavista, Va.

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MODERN BAND MILL AND PLANT, KENTUCKY; on river and rail; full equipment; low rates; low price; easy terms. Address No. 968, care Manufacturers Record.

LUMBER YARD AND PLANING MILL

FOR SALE, BEN AVON, PA.—LUMBER YARD.—In full operation, thoroughly established, equipped with small planing mill, consisting of jointer, planer, shaper, rip and cut-off saw, turning lathe, etc., all propelled by individual motors; annual sales, \$100,000; will sell or lease ground; open to thorough investigation. For further particulars address L. M. Swartz, No. 56 Charles street, N. S., Pittsburg, Pa.

MINERAL AND TIMBER LANDS, WATER POWERS AND MISCELLANEOUS PROPERTIES

FOR SALE—Boundary of 256,000 acres in State of Durango, Mexico; good ranch, mineral and timber land; contains 600,000,000 feet yellow pine; railway building within 25 miles of lands; 25-mile tramway to new railway can be built at small cost; 100 miles to Pacific port of entry by rail; for ship-loading for use of Panama Canal route and for all American and European shipping markets. We control and can deliver promptly this valuable boundary for \$2.50 per acre; one-fourth down; one, two and three years for balance. Principals only need reply. Address for particulars, J. C. Lindley, Greensboro, N. C.

BEFORE YOU BUY LAND or make an investment in the South or Southwest send for a copy of my "Investor and Land Buyer" with list of splendid properties for sale; free on application. Jo A. Parker, Parma, Mo.

HUNDRED THOUSAND ACRES, Texas, \$1.25 acre; 320,000 acres, \$7 acre; 70,000 acres, well watered, good vein bituminous coal and indications of oil, \$10 acre; 144,000 acres, \$4 acre; 1,000,000 acres agricultural and grazing lands, Coahuila, Mexico, 50c. acre; 72,000 acres virgin pine, Florida, \$7 acre. Power & Brooks, Montgomery, Ala.

WE HAVE FOR SALE in fee delivery 85,000 acres coal and mineral lands, located in the heart of rich coal and mineral belt of East Tennessee, bordered on two sides by railroads; lands lay best for easy and low cost of operating of any old settled good title lands; labor can be had in abundance, and reasonable average of 12,000 tons of good domestic and coke-making coal to the acre. Present owners own and have owned the fee to these lands for 18 years. Taxes paid and absolutely no squatters. Owners live near property. They will commence the advertising when actual buyers of standing arrive on lands and commence inspection, making deposit in escrow in local bank of one-fourth purchase price pending approval. Price \$150 per acre; one-fourth down; balance 1, 2 and 3 years. Address J. C. Lindley, Greensboro, N. C.

FOR SALE—Two beautiful lots at Sanford, Florida, \$800 the two, located in nice neighborhood, and more than thirty bearing orange trees on the two lots. Apply to C. R. Tutwiler, Dothan, Ala.

HOMES IN NORTH CAROLINA.—The land of opportunities. If you are looking for a home or investment where safety is considered, a sure profit is to be had, where there is a future for you and your family, we would like to hear from you without any obligation on your part. Chatham Real Estate & Insurance Co., Siler City, N. C.

Classified Opportunities

COAL LANDS FOR SALE

400 ACRES OF COAL LAND in Kentucky for sale; in sight of railroad; deal direct with purchaser. Apply at once. W. H. Tompkins, Bristol, Tenn.

COAL MINE FOR SALE

A SNAP BARGAIN FOR QUICK BUYER. Fine property, located Western Kentucky, on I. C. and L. & N. railroads; over one thousand shipping points; good rates; operating every day; no gas; no timbering; five-foot vein; no strikes; good money-maker; located in city limits; fine town, 3500 population; reason for selling, disagreement of the two owners. By mutual agreement, best offer to be accepted. A great bargain for a quick trader. For particulars write or wire E. K. Ashby, Evansville, Ind.

FOR SALE OR LEASE—Fairmont gas coal mine; 100 acres; eight-foot seam clean, hard and jumpy; fully equipped; now shipping two hundred tons daily; all improvements; non-union district; reasonable terms. Address No. 961, care Manufacturers Record.

CUT-OVER LANDS

CHEAP LAND IN THE RAIN BELT OF EAST TEXAS.—3200 acres of cut-over timber land, crossed by railroad; 100 acres in town-site center of tract; 90 per cent. tillable; branch furnishes ample water for all purposes; mostly upland, well drained; good sandy loam, especially productive for cotton, corn, fruit, vegetables, etc. We have 60-day option at \$5 per acre. This property will bring handsome profit in a very short time. Dunlop & McNeny, 1218 Praetorian Building, Dallas, Texas.

CUT-OVER TIMBER TRACTS

50,000 acres cut-over pine lands, Miss. \$6.50
30,000 acres cut-over pine lands, La. 6.00
75,000 acres cut-over pine lands, Tex. 5.00
18,000 acres cut-over hardwoods, La. 4.50

Marsh Lands for Reclamation. 60,000 acres in a body, Gulf Coast of La. 3.00
Timber Lands. 20,000 acres L. L. Y. pine, Fla., cut 3500 ft. 7.00
15,000 acres L. L. Y. pine, Ala., cut 7000 ft. 21.00
30,000 acres hardwood, cut 10,000 ft. (60% red gum). 10.00
Finest red gum proposition South. Wm. R. Taylor, 508 Perrin Building, New Orleans, La.

TIMBER LAND FOR SALE

NOTICE.—Timber buyers only. I have tracts in the South that will cut per acre, of pines and hardwoods, 5000, 6000, 8000, 10,000, 20,000, and one at 45,000 feet; no agents. J. C. Bollinger, Hagerstown, Md.

WANTED.—To sell one tract of timber within half mile of station on Southern Railway; can cut 2250 M. feet pine and 250 M. hardwood; can be shipped on 4% cent freight rate basis to Norfolk. Also one tract located on Virginian Railway; same rate of freight to Norfolk; nearly all pine and will cut about two million feet; railroad runs through piece of timber. Apply to V. D. Thorp, Newsoms, Va.

LAND AND TIMBER FOR SALE.—Wanted—To sell 471-acre tract of land, about 380 acres cleared, the balance timber land, the timber composed mostly of long and short leaf pine, the balance in cypress, tupelo, oak, ash and poplar; splendid opportunity for sawmill and turpentine. This property is situated in Berkeley county, bounded by Santee River and Wambaw Creek, easily accessible by water. Could be used for hunting preserves, also raising cattle. For full particulars write M. Hornik, 190 Meeting street, Charleston, S. C.

23,000 ACRES OF LONG-LEAF YELLOW PINE.—This tract is located in Manatee county, Florida, and contains 23,000 acres of all round L. L. Y. pine, guaranteed to cut 65,000,000 feet of good merchantable lumber. It is the largest body of all round lumber that is standing in the entire South, and as a turpentine proposition it is the largest and best that is in the entire South. After counting the value of the turpentine and resin and counting the land at only, say, 75 per acre, this timber will not stand over 76 cents per thousand, stumpage.

It is exceptionally well located for cheap transportation. It lies on both sides of Sarasota Bay, which is navigable to the Gulf, also railroad facilities from the tract. It lies about fifty miles south of Tampa. Price, \$10 per acre in fee. West Virginia Tri-Products Company, Howard L. Swisher, President, Morgantown, West Virginia.

TIMBER FOR SALE

FOR SALE—40,000,000 feet of first-class hardwood and cypress, situated right on a railroad. Apply to E. J. Iles, Alexandria, La.

FOR SALE—125,000,000 feet, 60% pine, 40% hardwood, on river, South Georgia; \$1.25 per M.; one-third cash; balance easy. Continental Land Co., Indianapolis, Ind.

BOX SHOOTS

WE WANT to correspond with concern buying box shoots, made of all pine, grading South Carolina No. 4 and better. Moore Lumber & Manufacturing Co., Lancaster, S. C.

FARM AND TIMBER LANDS

FARM AND TIMBER LANDS.—We have attractive offerings in farm, yellow pine and hardwood timber lands. We also handle coal and ore properties. Correspondence from interested parties invited. Provident Trust & Security Co., Land Dept., Walton Bldg., Atlanta, Ga.

I HAVE BARGAINS IN TIMBER TRACTS, large colonization propositions, cut-over lands and reclamation tracts in any size wanted up to 150,000 acres from \$2.50 per acre up.

Wm. R. Taylor, Land and Timber Investments, 508 Perrin Building, New Orleans, La. Established 1898. Sales over \$6,000,000.

COLONIZATION LANDS

12,000 ACRES in artesian and onion district, Southwest Texas; all level, rich soil; three miles railroad; best colonization tract obtainable; price \$16 acre; \$50,000 cash; balance 10 years. West Texas & Mexico Land Co., 531 Gunter Bldg., San Antonio, Tex.

FOR SALE—By owner, 20,000 acres of land, located in Southern Alabama, especially adapted for a colonizing proposition, offered at a bargain; terms reasonable. For particulars address H. H. Wefel, Jr., Mobile, Ala.

BALDWIN COUNTY AND MOBILE COUNTY, ALABAMA, CUT-OVER LANDS. Large and small tracts, near Mobile Bay, in most desirable and rapidly developing sections. If looking for tract for colonization, or investment offering safe, quick and profitable returns, don't fail to write for prices and liberal terms. Opening of Panama Canal will greatly increase the value of these lands. Robert Berney, 915 Van Antwerp Building, Mobile, Ala.

TEXAS COLONIZATION BARGAIN.—3200 acres good level, tillable, productive cut-over land on railroad, townsite on land, at \$4 per acre. S. C. McCormick, Ennis, Texas.

FARMING LANDS

FOR SALE—Farms from the mountains to the ocean; fruit, poultry, grain, stock, etc.; catalogues free. Geo. E. Crawford & Co., Richmond, Va.

WE OWN and offer for sale on easy terms more than 100,000 acres of farming lands in Louisiana and Mississippi. Anyone interested in Southern investments should write us direct and save the middleman's profit. The Lampton Realty Co., 405 Hibernia Bank Building, New Orleans, Louisiana.

FARM AND RANCH LANDS

90,000 acres Durango, price \$1.75 per acre
80,000 acres Coahuila, price 2.25 per acre
80,253 acres Chihuahua, price 3.00 per acre
100,000 acres Sonora, price 3.00 per acre
375,360 acres Durango, price 2.00 per acre
162,783 acres Chihuahua, price 3.00 per acre
135,147 acres Durango, price 1.50 per acre
230,000 acres Coahuila, price 1.50 per acre
3,500,000 acres Chihuahua, price 2.50 per acre
405,000 acres Chihuahua, price 2.00 per acre
30,690 acres Tamaulipas, price 3.50 per acre
70,000 acres Chihuahua, price 1.50 per acre
28,000 acres Chihuahua, price 3.50 per acre
103,355 acres Tamaulipas, price 2.25 per acre
179,648 acres Tamaulipas, price 2.25 per acre
80,250 acres Coahuila, price 2.75 per acre
1,116,640 acres Tamaulipas, price 2.50 per acre
139,365 acres Sonora, price .75 per acre
191,000 acres Sonora, price .75 per acre
60,000 acres Durango, price 4.50 per acre
200,000 acres Durango, price 2.50 per acre
100,000 acres Sinaloa, price 5.50 per acre
Cass & Fry, 30 City National Bank Building, El Paso, Texas.

PECAN ORCHARDS

VALDOSTA, GEORGIA, PECAN PLANTATIONS.—Pecan culture offers largest returns; five-acre tract on easy terms assures a steady growing income; we take care of orchards for four years; 500 acres under cultivation in budded paper-shell pecans. Write for booklet. South Georgia Real Estate & Development Co., Valdosta, Ga.

APPLE ORCHARDS

ORCHARD FARM FOR SALE CHEAP if sold at once; 50 acres; good limestone land; located on railroad; excellent buildings; well fenced; 30 acres in bearing apple orchard, worth price asked for farm. For particulars write Box 55, Winchester, Va.

FARM, FRUIT AND TRUCK LANDS

ALABAMA

FRUIT AND STOCK FARM.—900 acres of fine land, adapted to fruit, stock raising and general farming; 600 acres in cultivation; balance in fine timber, at least 2,000,000 feet; these lands are extra fertile; situated in Southwest Alabama, 2½ miles of county-seat town; fine shipping facilities; abundance of good labor. Price \$25 per acre, with a bond guarantee that this property will increase in value 100 per cent. in next ten years. The reason this property is offered for sale, have more lands than I can look after. Address Owner, Box 183, Orlando, Fla.

MISSISSIPPI

40-ACRE TRUCK FARMS for sale in the famous strawberry belt of Louisiana; on main line of Illinois Central Railroad. Price \$25 per acre on easy terms. Similar lands only a few miles distant are selling as high as \$75 per acre. The Lampton Realty Co., 405 Hibernia Bank Building, New Orleans, Louisiana.

ARKANSAS

400 ACRES of good improved farm land, located in N. E. Ark.; 280 acres in cultivation; 5 sets of buildings; one good barn, cost \$1500; one mile from town; school building on farm. Will trade for mule and good city property. Such bargain for cash. Must be sold in 90 days. Address Box 321, Altus, Okla.

FLORIDA

FLORIDA FARMS ARE FORTUNES.—Our soil similar to fertile sections Iowa, Missouri; easy-payment plan. Write for booklet. Miami Land & Investment Co., Marianna, Fla.

GREAT FARM propositions in the best farm county in the South; Baker county lands are unequalled. Write or see us at once. Tate Powell, MacClellan, Fla.

COME TO RICHLAND for bargains in good lands, with improvements, in high rolling country, in lots from 5 acres to 40 acres. Buy direct from owners of properties. S. Buckingham, Richland, Fla.

FLORIDA FRUIT AND TRUCK LANDS

—We offer 10-acre tracts, in that part of the State of Florida lying in Hillsboro and Lake Butler region, in the Pinellas peninsula, on the west coast of Florida, on the Gulf of Mexico; with its elevation and rolling hills, especially suited for fruits of all kinds—grapefruit, oranges, grapes, dates, figs, bananas, peaches and other fruits, as well as vegetables, potatoes, corn, beans, peanuts and all the varieties that can be produced anywhere. The Tarpon Springs district offers the most favorable conditions for farmer, home seeker and investor. Fertile land in small tracts, easy monthly payments; guaranteed title. Investigation invited. If you want a bargain and a home in the most desirable part of Florida, write now for particulars and reservation. Tampa & Tarpon Springs Land Co., Tampa, Fla.

WRITE US for listings covering open and improved tracts of citrus and vegetable lands in all parts of Florida; many attractive offerings. Our specialty: Tampa and suburban property. Have an exceptionally fine subdivision proposition; platted and ready for market; forty acres; frontage on eight-foot paved street; ten minutes from center of Tampa; listed with us exclusively at a bargain. Telegraph or write Sperry Land Company, 217 American National Bank Bldg., Tampa, Fla.

LOUISIANA

HEADQUARTERS FOR NORTH LOUISIANA LANDS.—Large and small tracts, suitable for plantations, small farms, orchards or truck gardens. Climate, soil and health conditions here are unsurpassed. The staple crops of the North grow in this section alongside of cotton and cane. A great stock country. Write for particulars stating your requirements. References, my customers and any bank in Shreveport. W. A. Jones, Authority on North Louisiana Lands, Shreveport, La.

FORTY-ACRE TRUCK FARMS for sale in the famous strawberry belt of Louisiana; on main line of Illinois Central Railroad. Price \$25 per acre on easy terms. Similar lands only a few miles distant are selling as high as \$75 per acre. The Lampton Realty Co., 405 Hibernia Bank Building, New Orleans, Louisiana.

MISSISSIPPI

FORTY-ACRE FARMS in George county, Mississippi, 35 miles northwest of Mobile. This is one of the most-favored general farming sections of the entire South, and no better values can be found anywhere. Price \$25 per acre on easy terms. The Lampton Realty Co., 405 Hibernia Bank Building, New Orleans, Louisiana.

NORTH CAROLINA

FOR SALE—Between Salisbury and Lexington, 100-acre farm on line of Southern Railroad, 1 mile from Linwood, N. C., ¼ mile from Holtsburg flag station; red clay land; timbered and watered. For particulars address Wm. B. Meares, Linwood, N. C.

TENNESSEE

374 ACRES of A-1 bottom land, 1500 acres in cultivation, fair improvements, and rents for \$6250 per year; owner getting old, offers one of the greatest bargains of the day; the whole tract can be had for \$52,000 on reasonable terms. This is a snap. King Real Estate Co., Byrd Bldg., Memphis, Tenn.

TEXAS

10,000 ACRES Nueces River bottom land; all subdivided into small tracts; very best truck and fruit land in Southwest Texas; will sell in small tracts or in a body. Emil Locke, 712 Gibbs Bldg., San Antonio, Texas.

WOULD YOU INVEST A SMALL AMOUNT ON SNAP JUDGMENT?—In order to close an estate we are offering for quick sale 220 acres of unimproved land in Smith county, Texas, at the extremely low price of \$5 per acre; land \$5 per cent. tillable; cut-over hardwood; gray sandy soil; in good community, and will double in value in less than 12 months. Dunlop & McNeny, 1218 Praetorian Building, Dallas, Texas.

TEXAS FRUIT AND GENERAL FARM land close to Houston, Texas, which has a greater future than any city in the United States. Deep rich prairie soil will become very valuable in the near future. Farm tracts 50 acres or more, only \$35 per acre; good terms. Write for information. Investigate at once. C. H. Stanclif Land Co., Houston, Texas.

THE BLACK LANDS OF NORTH TEXAS are justly famous as the best in the world for the production of cotton, corn, wheat and oats—not one crop, but four. Once Goodwin's Denton Creek Subdivision consists of more than 8000 acres of this land, situated on the Denton and Wise county line, 50 miles northwest of Dallas, and is offered at reasonable prices—thirty to forty dollars per acre—and upon such terms that any man with a few hundred dollars cash can easily meet. The gradual and steady enhancement in value of such land should appeal to investors, while the very easy terms upon which it is offered should appeal to the farmer without a home. Address Fount Ray, Decatur, Texas.

CHOICEST TRACT of artesian land in Southwest Texas; 1240 acres deep rich soil, suited to truck, fruits, alfalfa; flowing wells under 500 feet; part in cultivation with good improvements; near railroad; can be sold in small tracts from \$100 to \$150 acre; must sell; \$50 acre; 1/2 cash. West Texas & Mexico Land Co., 631 Gunter Bldg., San Antonio, Tex.

SOUTH TEXAS LAND.—We deal in bargains in South Texas land, wholesale or retail; 10 acres or more garden, orange and berry land on easy monthly payments. Send for our illustrated literature. We also have large and small improved farms and ranches. 10,000 acres, Texas ranch, at \$1.35 per acre. 50,000 acres, 50 per cent. tillable, at \$3 per acre.

30,000 acres, with fine improvements, at \$3 per acre. 20,000 acres, all agricultural, at \$6 per acre. 29,000 acres, prairie, Chambers county, at \$16 per acre.

Write, stating what you want. L. Bryan & Co., Houston, Texas.

EAST TEXAS RAIN BELT.—1400 acres in Van Zandt county, on the main line of the T. & P. Railroad; 700 acres of rich bottom land; 300 acres in cultivation; four sets of improvements; all fenced and cross-fenced. Owner says: "Land is a bargain from every standpoint; the part which we have cleared paid from \$30 to \$50 per acre in cordwood, etc." Good rich sandy loam; well drained; 50 per cent. tillable; bargain at \$13.50 per acre. Answer quick. Dunlop & McNeny, 1218 Praetorian Bldg., Dallas, Tex.

2464-ACRE FARM on Lavaca River, 5 miles north of Edna, Texas; 500 acres river bottom field; 10 small rent houses; one 10-room ranch house; private phone line out of Edna; all fenced; several wells; 3000 bearing pecan trees; will sell or trade for good city property at \$35 per acre. Emil Locke, 712 Gibbs Bldg., San Antonio, Texas.

THE FRIE VALLEY WINTER GARDENS, La Salle county, Southeast Texas, a colony of 100,000 acres level rich black sandy loam in famous artesian belt; grow oranges, figs, Bermuda onions. We are opening Fowlerton, a new town on new railroad in heart of the colony. Guaranteed improvements on townsite. A 10-acre farm and free residence lot on terms of \$15 cash; balance \$10 monthly. Write for booklet A, prices, plats, etc. Fowler Brothers Land Co., Frost Building, San Antonio, Texas.

MACHINERY AND SUPPLIES

WANTED.—Every consumer in the Southwest to know that the Texas Rolling Mill Company of Fort Worth, Texas, manufactures track spikes, track bolts, machine bolts and nuts; also standard sizes of bar iron. One hundred tons always in stock. Prompt shipments our specialty. Satisfaction guaranteed.

LOCOMOTIVES FOR SALE

FOR SALE—Ten locomotives, suitable for tramroad and sawmill purposes. Now being rebuilt at Tampa Northern Shops. Aripeka Sawmills, Tampa, Fla.

FINANCIAL

MORTGAGE LOANS, carefully selected, on good cotton and corn farms in Southern Oklahoma; 5 year, 5%, \$250 to \$2500, to suit investors. This county's population, 25,000; assessed values, \$10,000,000; one of largest cotton producers. Can place your money very safely; 25 years' experience; 10 years bank cashier here; intimately acquainted with lands, people, conditions; abundant references; circular. Write J. G. James, Roff, Okla.

STOCK FOR SALE.—I have for sale for a limited time a block of stock in the Consolidated Concrete Co. Incorporated under laws of Illinois for \$100,000, fully paid and non-assessable. This stock is in 100 shares.

The title are in the I. C. R. R., where they have been for two years, and a carload is awaiting weather to be placed in tracks at Carbondale. All railroad officials who have seen them endorse their use. A good investment. Will sell for a limited time stock from one share to ten. If stock taken when remittance refused, will return money.

Send with application for stock a small payment to show good faith. Remember, this is a private block of stock and may be withdrawn at any time. Address all communications H. B. Eshleman, Treasurer, Pulaski, Ill.

PATENTS

THE INVENTORS' OUTLOOK educates inventors on patents. It tells the whole truth about wasted energy, failures, opportunities and successes. Not an attorney's magazine. For patent reform and inventive success. Special offer: 4 mos., 25 cts.; \$1 year. Opposite U. S. Patent Office, Washington, D. C.

CLASSIFIED OPPORTUNITIES

CONTINUED FROM PAGE 84 and 85.

PATENT ATTORNEYS

EUGENE C. BROWN, ENGINEER and Patent Lawyer, Suite 40 Victor Building, Washington, D. C. Member Bar U. S. Supreme Court. Patents and Trademarks. Inventions are considered both from Engineering and Legal standpoints in my prosecution of patents. An experience of over 9 years as Examiner in U. S. Patent Office and over 6 years as Patent Expert in important patent suits are my especial qualifications. Reports upon validity and infringement. Send sketch of invention for advice.

PATENT YOUR IDEAS.—\$100,000 offered for one invention, \$500 for another; book, "How to Obtain a Patent" and "What to Invent," sent free; send rough sketch for free report as to patentability; patent obtained or fee returned. We advertise your patent for sale at our expense. Chandee & Chandee, patent attorneys, 978 F street, Washington, D. C.

PATENTS Secured or Fee Returned. Send sketch for free report as to patentability. Guide book and what to invent, with valuable list of inventions wanted, sent free; \$1,000,000 offered for one invention; \$16,000

for others. Patents secured by us advertised free in World's Progress; sample free. Victor J. Evans & Co., Washington, D. C.

PATENTS FOR SALE

WE HAVE recently secured the following patents. Address all communications to Sales Dept., Victor J. Evans & Co., Washington, D. C.: N. C. Garland, book; Edward C. Jones, wheel; Samuel E. Feltz, churn; James A. Dodd, roller truck; Charles E. Hoops, hatpin device; Colbert G. Hayhurst, feed bag; Geo. L. Roppecker and

Albert L. Scott, porch flower bracket; Wm. E. Petchuck, vegetable grater and slicer; Richard Pattin, nozzle; Benj. McCann, rail tie; Ernest A. Waldspurger, automatic feed bag for horse; Chas. Boccia, comb and brush; John Bittner, piston for explosive engines; Winfield Scott Arthur, compression gibbs; Richard Stuart, gun sight; Mrs. Cordelia Spencer, lid for cooking utensil; Leonard R. Steel, glass-lined milk can and storage ice-cream can; J. K. McElvey, clutch; Thos. H. McKay, clamp coupling for railroad; Cyrus Lewis, rifling machine; Tennes Silverton, metal rail and tie; John J. Novitski, slip pulley; J. F. Robins, harrow.

PROPOSALS

PUBLIC BUILDINGS.

CONSTRUCTION BONDS

MISCELLANEOUS.

GOVERNMENT PROPOSALS

PROPOSALS FOR STEEL ANCHOR Bolts, Steel Cable, Lead Bends, Pipe Fittings, Valves, Sheet Brass, Blacksmith's Punches, Hammers, Hammer Handles, Oilers, Mop Heads, Hose, Packing, Emery Cloth, Steel Tapes, Paper Clips, Twine, Index Cards, Bond Paper, Carbon Paper, Coal Tar, White Zinc, Japan Drier, Shellac, Chrome Yellow, Sienna, and Umber. Sealed proposals will be received at the office of the General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10:30 A. M. March 25, 1912, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 691) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City, and 614 Whitney-Central Building, New Orleans, La.; also from the U. S. Engineer Offices in the following cities: Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo., and Chamber of Commerce, Quincy, Ill. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

PROPOSALS—ANNUAL ESTIMATE FOR The period ending June 30, 1913.—Paints, Oils, Japan Drier, White Zinc, Red Lead, White Lead, Putty, Shellac, Turpentine, Turpentine Substitute, Kerosene, Gasoline, Coal Tar, Lye, Sal Soda, Sea-coal Facing, Graphite, Ammonium Alum, Aluminum Sulphate, Soap, Candles, Metal Polish, Cotton Waste, and Wool Waste. Sealed proposals will be received at the office of the General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10:30 A. M. April 13, 1912, at which time they will be opened in public, for furnishing the above-mentioned articles. Blanks and general information relating to this Circular (No. 692) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill.; F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

POSTOFFICE DEPARTMENT, Washington, February 20, 1912. Sealed proposals

will be received at the office of the Chief Clerk, Postoffice Department, until the first day of May, 1912, at two o'clock P. M., at which time and place they will be opened in the presence of the bidders or their authorized agents or attorneys, for the purchase of waste materials from the Department, including waste paper; old canvas with metal parts attached, old leather with metal parts attached, and canvas and leather with metal parts attached; canvas cuttings and lacing cord, free from metal parts; brass drillings, punchings, pins, lock parts, brass drillings, lock parts, etc.; iron and steel; steel strips from which lock parts, etc., have been punched; old scales, brass and iron; oreide, from the Annex Building; waste wood accumulating at the Postoffice Department Annex and other buildings under the control of the Department, during the fiscal year ending June 30, 1913. Blanks for proposals, with specifications and instructions, will be furnished upon application to the Chief Clerk and Superintendent of Buildings, Postoffice Department, Washington, D. C. FRANK H. HITCHCOCK, Postmaster-General.

POSTOFFICE DEPARTMENT, Washington, February 20, 1912. Sealed proposals will be received at the office of the Chief Clerk, Postoffice Department, until the first day of May, 1912, at two o'clock P. M., at which time and place they will be opened in the presence of the bidders or their authorized agents or attorneys, for the performance of the following services as they may be required during the fiscal year ending June 30, 1913: Washing and ironing towels, shoeing horses, removing debris and ashes; cleaning, winding and repairing the clocks of the Postoffice Department, including the tower clock; recaning chairs and conducting auction sales. Blanks for proposals, with specifications and instructions, will be furnished upon application to the Chief Clerk and Superintendent of Buildings, Postoffice Department, Washington, D. C. FRANK H. HITCHCOCK, Postmaster-General.

POSTOFFICE DEPARTMENT, Washington, February 20, 1912. Sealed proposals will be received at the office of the Chief Clerk, Postoffice Department, until the first day of May, 1912, at two o'clock P. M., at which time and place they will be opened in the presence of the bidders or their authorized agents or attorneys, for the performance of the following services as they may be required during the fiscal year ending June 30, 1913: Washing and ironing towels, shoeing horses, removing debris and ashes; cleaning, winding and repairing the clocks of the Postoffice Department, including the tower clock; recaning chairs and conducting auction sales. Blanks for proposals, with specifications and instructions, will be furnished upon application to the Chief Clerk and Superintendent of Buildings, Postoffice Department, Washington, D. C. FRANK H. HITCHCOCK, Postmaster-General.

PROPOSALS FOR THE PURCHASE OF Steel Back, Side, and Culvert Forms, offered for sale by the Isthmian Canal Commission, which are no longer needed. Sealed proposals will be received at the office of the General Purchasing Officer, Isthmian Canal Commission, Washington, D. C., until 10:30 A. M. May 8, 1912, at which time they will be opened in public, for the purchase of the above-mentioned articles. Blanks and general information relating to this Circular (No. 690) may be obtained from this office or the offices of the Assistant Purchasing Agents, 24 State Street, New York City; 614 Whitney-Central Building, New Orleans, La., and 1086 North Point Street, San Francisco, Cal.; also from the U. S. Engineer Offices in the following cities: Seattle, Wash.; Los Angeles, Cal.; Baltimore, Md.; Philadelphia, Pa.; Pittsburgh, Pa.; Boston, Mass.; Buffalo, N. Y.; Cleveland, Ohio; Cincinnati, Ohio; Chicago, Ill.; St. Louis, Mo.; Detroit, Mich.; Milwaukee, Wis.; St. Paul, Minn.; Chattanooga, Tenn.; Louisville, Ky.; Mobile, Ala., and Galveston, Tex.; Commercial Club, Kansas City, Mo.; Chamber of Commerce, Quincy, Ill.; and Commercial Club, Tacoma, Wash. F. C. BOGGS, Major, Corps of Engineers, U. S. A., General Purchasing Officer.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., March 9, 1912. Sealed proposals will be received at this office until 3 o'clock P. M. on the 20th day of April, 1912, and then opened, for the construction, complete (including plumbing, gaspiping, heating apparatus, electric conduits and wiring, and interior lighting fixtures), of the United States Postoffice at Corinth, Miss. The building is two stories and basement, with a ground area of approximately 4500 square feet. First floor is fireproof; stone and brick facing; tin roof. Drawings and specifications may be obtained from the custodian of site at Corinth, Miss., or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., March 9, 1912. Sealed proposals will be received at this office until 3 o'clock P. M. on the 20th day of April, 1912, and then opened, for the construction, complete (including plumbing, gaspiping, heating apparatus, electric conduits and wiring, and interior lighting fixtures), of the postoffice, courthouse, and custom-house at Miami, Fla. The building is of three stories, with basement and unfinished attic, and has a ground area of approximately 1200 square feet. Fireproof construction throughout, stone facing, tile and copper roof. Drawings and specifications may be obtained from the custodian of site at Miami, Fla., or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., March 11, 1912. Sealed proposals will be received in this office until 3 o'clock P. M. on the 22d day of April, 1912, and then opened, for the construction, complete (including plumbing, gas piping, heating apparatus, electric conduits and wiring, and lighting fixtures), of the United States Postoffice at Mexico, Mo. The building has a ground area of approximately 5000 square feet, is of one story with basement, mezzanine, and unfinished attic; fireproof construction, brick and stone facing, and tin roof. Drawings and specifications may be obtained from the custodian of site at Mexico, Mo., or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

U. S. ENGINEER OFFICE, 920 17th St. N. W., Washington, D. C., March 9, 1912. Sealed proposals for furnishing and placing riprap on the seawall and for furnishing and delivering building stone, Anacostia River, D. C., will be received here until 12 M. March 25, 1912, and then publicly opened. Information on application. W. C. LANGFITT, Lieut.-Col., Engrs.

MISSISSIPPI RIVER COMMISSION, First and Second Districts, U. S. Engineer Office, Memphis, Tenn., February 26, 1912. Sealed proposals for furnishing and placing riprap on the seawall and for furnishing and delivering building stone, Anacostia River, D. C., will be received here until 12 M. March 25, 1912, and then publicly opened. Information on application. CLARKE S. SMITH, Maj., Engineers.

U. S. ENGINEER OFFICE, 920 17th St. N. W., Washington, D. C., March 4, 1912. Sealed proposals for excavation, building dam and construction necessary in remodeling Georgetown Reservoir will be received at this office until 12 M. April 3, 1912, and then publicly opened. Information on application. W. C. LANGFITT, Lieut.-Col., Engrs.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., March 9, 1912. Sealed proposals will be received in this office until 3 o'clock P. M. on the 24th day of April, 1912, and then opened, for the construction, complete (including plumbing, gaspiping, heating apparatus, electric conduits and wiring, and lighting fixtures), of the United States Postoffice at Corinth, Miss. The building is two stories and basement, with a ground area of approximately 4500 square feet. First floor is fireproof; stone and brick facing; tin roof. Drawings and specifications may be obtained from the custodian of site at Corinth, Miss., or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

TREASURY DEPARTMENT, Office of the Supervising Architect, Washington, D. C., March 6, 1912. Sealed proposals will be received in this office until 3 o'clock P. M. on the 17th day of April, 1912, and then opened, for the mechanical equipment (except gas-piping and lighting fixtures) of the United States Postoffice at McKinney, Tex., in accordance with drawings and specification, copies of which may be obtained at the office of the superintendent of construction, at McKinney, Tex., or at this office, at the discretion of the Supervising Architect. JAMES KNOX TAYLOR, Supervising Architect.

SEALED PROPOSALS will be received at the office of the Supervising Architect, Treasury Department, Washington, D. C., up to three o'clock P. M. on Thursday, March 21, 1912, and then opened, for all labor and materials required for the complete construction of a pier for the Philadelphia Immigration station at Gloucester City, New Jersey. Drawings, specifications and statement of conditions governing intending bidders may be obtained upon application to the Commissioner-General of Immigration, Department of Commerce and Labor, Washington, D. C.

PROPOSALS will be received at the Bureau of Supplies and Accounts, Navy Department, Washington, D. C., until 10 o'clock A. M. April 2, 1912, and publicly opened immediately thereafter, to furnish at the Naval Hospital, Annapolis, Md., a quantity of window and door screens, etc. Applications for proposals should refer to Schedule 4399. Blank proposals will be furnished upon application to the Navy pay office, Baltimore, Md., or to the Bureau, T. J. COWIE, Paymaster-General, U. S. N. S. 3-12.

NEW BOND OFFERINGS

Bond Sale

Corinth, Miss. Alcorn County, Mississippi, will on April 2, 1912, at 2 P. M., at the Courthouse, in City of Corinth, sell to highest and best bidder for cash, \$11,500 Jail Bonds; 5 per cent.; 10 years.

Address

O. M. HINTON, Clerk. Corinth, Miss.

\$52,000 City of Quitman (Ga.) 4 1/2% 25-Years School and Fire Department Bonds.

Bids will be received by the City Clerk of Quitman, Ga., up to Wednesday, March 20th, 1912, for the purchase of \$52,000 4 1/2 per cent. 25-year School and Fire Department Bonds. Bids will not be considered unless accompanied by certified check for \$500, and the right is reserved to reject all bids. Full information may be obtained by writing the City Clerk.

G. B. GARWOOD, City Clerk.

\$150,000 Bonds

Sealed proposals will be received by G. Lee McGlasson, Clerk, Gainesboro, Tennessee, until 3 o'clock P. M. March 16, 1912, for \$150,000 Coupon 20-30 Jackson County, Tennessee, Good Roads Bonds. Same not to exceed 4 1/2 per cent. interest. Bonds to be paid off in 25 years.

\$50,000 April 1, 1912.
\$50,000 October 1, 1912.
\$50,000 April 1, 1913.
Interest payable annually April 1 of each year. Denomination, \$1000. Bids will be considered for all or any portions of said bonds. Bids must be accompanied by certified check for 10 per cent. of bid, payable to order of Trustee, Jackson County, Tenn., as a guarantee of good faith. No bid considered for less than par. Right to reject any and all bids reserved.

T. M. GAILBREATH, Clerk, Co. Cr. G. LEE McGLOSSON, Clerk, Co. Cr. J. M. DEAN, Secy. G. B. Comrs. Gainesboro, Tenn., January 10, 1912.

MISCELLANEOUS

Notice to Builders and Heating Contractors

Sealed bids will be received at the Windsor Hotel, Jacksonville, Fla., until noon April 8, 1912, for the construction of a dormitory and hospital building to be erected on the grounds of the Florida State College for Women at Tallahassee, Fla.

Each bid for the construction of the building must be accompanied by certified check in the amount of \$300, and each bid for the installation of steam-heating plant with certified check for the amount of \$200, payable to P. K. Yonge, Chairman, as a guarantee that if awarded the contract the successful bidder will promptly enter into contract and furnish a surety bond as required by specifications.

The right is reserved to reject any and all bids. Drawings and specifications may be seen at the office of William A. Edwards, Architect, 622 Candler Building, Atlanta, Ga.

Contractors wishing to bid may obtain drawings and specifications from the architect by immediately applying for same and accompanying his application with a certified check in the amount of \$25, payable to Wm. A. Edwards, Architect.

Failure on the part of the contractor to give bona fide bid for the work, or failure to return the drawings and specifications to the architect immediately after bids are received, without cost to the architect, will forfeit the \$25 certified check to the architect.

Subcontractors wishing to get drawings and specifications are required to pay the architect \$10 cash for use of same.

BOARD OF CONTROL OF THE STATE OF FLORIDA. P. K. Yonge, Chairman.

Sewer Construction

Sealed proposals will be received by the Board of Affairs, Bluefield, W. Va., until noon April 12 for the trench excavation, laying a 15" vitrified-clay sanitary sewer and constructing a 54" concrete storm sewer, laid in the same trench, with their necessary appurtenant structures. The right to reject any or all bids is reserved. Plans and specifications on file. Approximate lengths, 300 linear feet of storm sewer and 340 linear feet of sanitary sewer.

W. H. CAMPBELL, City Engineer.

PAVING, ETC.

Paving

NOTICE TO CONTRACTORS.

Sealed proposals will be received by the Board of Affairs of the City of Bluefield, W. Va., until 12 A. M. April 5, 1912, for the paving of various streets with bituminous macadam and concrete curbs and gutters.

Approximately 38,000 square yards of paving is contemplated.

Proposals to be made on forms to be furnished by the city and accompanied by a certified check in the amount of \$500. The Board of Affairs reserves the right to reject any and all bids.

W. H. CAMPBELL, City Engineer.

Street Paving

Sealed proposals will be received until 12 o'clock noon March 25, 1912, by the Board of Commissioners for Street Improvement District No. 192 (West Seventh Street), Little Rock, Arkansas, for the grading, draining, curbing and paving with wood block, asphalt or brick approximately 16,850 square yards of paving.

Plans and specifications may be seen at the offices of the Engineers of the district.

Proposals must be sealed and addressed to A. Brizzolara, Chairman, in care of the Mercantile Trust Co., Little Rock, Ark., and must be accompanied by certified check for \$500.

The Board of Commissioners reserves the right to reject any and all proposals.

A. BRIZZOLARA, Chairman.

L. J. MENTON, Secretary.
FORD & MacCREA, Engineers for District

PROPOSALS

PUBLIC BUILDINGS.

CONSTRUCTION BONDS

MISCELLANEOUS.

PAVING, ETC.

Grading, Draining and Paving

CONTRACTORS' NOTICE.

Sealed bids will be received by the Board of Street Improvement District No. 186, Little Rock, Arkansas, until 2 o'clock P. M. Wednesday, March 20, 1912, for grading, draining and paving with vitrified brick, asphalt, asphaltic concrete, creosoted blocks or bitulithic pavement on concrete foundation within said district. Extent of proposed work is approximately the paving of fourteen blocks on concrete base.

Plans and specifications may be obtained from Sam W. Reyburn, Chairman District No. 186, care of Union Trust Company, Little Rock, Arkansas, to whom all bids should be addressed. Bids must be accompanied by certified check for \$500. The right is reserved to reject any and all bids.

SAM W. REYBURN, Chairman.
R. W. RIGGSELL, Secretary.

Excavation and Paving

NOTICE TO CONTRACTORS.

Lynchburg, Va.

Sealed proposals for the paving of River-mont avenue, in the City of Lynchburg, Virginia, will be received by the Council Committee on Streets, at the office of the City Engineer, until 12 noon of Saturday, March 23, 1912, and on that day will be publicly opened and read.

All bids must be made upon blank forms to be obtained at the office of the City Engineer, Lynchburg, Va. A surety bond will be required for the faithful performance of the contract, and a certified check shall accompany each bid.

The principal items of work to be done are as follows:

50,000 cubic yards excavation.
18,000 cubic yards trench excavation.
66,000 square yards paving.
23,000 linear feet curb.

Plans can be seen, specifications and forms of proposals obtained at the office of the City Engineer, Lynchburg, Va.

The Street Committee reserves the right to reject any or all bids should they deem it to be for the interest of the City of Lynchburg to do so.

For detailed information and further particulars apply to

H. L. SHANER,
City Engineer.

Street Paving

Little Rock, Ark.

Sealed proposals will be received until 10 A. M. March 20, 1912, by the Board of Commissioners for Street Improvement District No. 197 of Little Rock, Arkansas, for grading, draining, curbing and paving with macadam, tarvin macadam or bitumated concrete approximately 10,000 square yards. Plans and specifications may be seen at the office of the Secretary and the offices of the Engineers of the district.

Proposals must be sealed and addressed to J. F. Houck, 309 Main street, Little Rock, Ark., Chairman Street Improvement District No. 197, Little Rock, Ark., and must be accompanied by certified check for \$500.

The Board of Commissioners reserves the right to reject any and all proposals.

WALTER J. TERRY,
Secretary.

J. F. HOUCK,
Chairman,
FORD & MacCREA,
Engineers for the District,
338-40 Gazette Bldg.

MISCELLANEOUS

Sidewalks and Curbing

Uniontown, Ala.

The Town of Uniontown solicits bids on the laying of concrete walks and curbing with gutters. Amount of work approximately \$10,000. Instructions to bidders, contract and specifications mailed on application.

DUD. P. COLEMAN, Mayor.

Foundations

Mobile, Ala.

Sealed proposals will be received by the Board of Commissioners of the City of Mobile until noon March 25, 1912, for construction of foundations under proposed steel sheds, 1000 to 1240 feet long, such foundations consisting of piling and concrete piers. Plans and specifications are on file in the office of the City Engineer, and can be had on application. The right is reserved to reject any or all bids.

H. PILLANS, Commissioner.
J. J. McMAHON, Secretary.
WRIGHT SMITH, City Engineer.

To Steel Bridge Builders

Notice is hereby given that at the regular meeting of the Board of Supervisors, to be held in the Courthouse in Batesville, Miss., on the first Monday of April, A. D. 1912, bids will be received for building three steel bridges, the contract to be awarded to the lowest responsible bidder.

Plans and specification on file at the office of the Chancery Clerk in Batesville, Miss.

R. W. DRAPER, Clerk,
Batesville, Miss.

Fire-Proof School Buildings

NOTICE TO CONTRACTORS.

Dallas, Tex.

The Board of Education of the City of Dallas, Texas, will receive bids for the erection of two fireproof eight-room school buildings to be erected in the city of Dallas. For plans and specifications write W. F. Nicol, School Architect, High School Building, Dallas, Texas. A \$50 deposit will be required for each set of plans and specifications. Bids to be in the office of the Secretary Board of Education on or before March 28, 1912, 5 P. M. A certified check to the amount of \$500 is to accompany each bid. The successful bidder will be required to enter into a \$5000 surety bond for the successful completion of the work according to plans and specifications. The board reserves the right to reject any or all bids.

C. M. MOORE,
Secretary Board of Education.

Supreme Court Building

Tallahassee, Fla.

The State Building Commission of Florida invites sealed proposals for the construction of a Supreme Court Building to be erected at Tallahassee. Building 75x125 feet, three stories in height, reinforced concrete construction, exterior of brick and terra-cotta, steam heated. Drawings and specifications may be seen at office of the Governor, Tallahassee, Fla., and at office of P. Thornton Marry, Architect, Candler Bldg., Atlanta, Ga. Copies of drawings and specifications may be procured upon application to said Architect, accompanied by a deposit of \$15 to insure return of drawings. Sealed proposals, accompanied by a certified check for \$1000, payable to the State Treasurer of Florida, will be received by the Governor, Tallahassee, Fla., up to three o'clock P. M. Friday, March 29, 1912. Right reserved to reject any or all proposals submitted.

Steel Shed

Mobile, Ala.

Sealed proposals will be received by the Board of Commissioners of the City of Mobile until noon March 25, 1912, for the complete construction of a steel shed approximately 1000 by 100 feet, and also alternatively on shed 1240 by 100 feet, on the river front, in accordance with plans and specifications on file in the office of the City Engineer, which can be obtained on making a deposit of \$5.

The right is reserved to reject any or all bids.

H. PILLANS, Commissioner.
J. J. McMAHON, Secretary.
WRIGHT SMITH, City Engineer.

New Jail

NOTICE TO CONTRACTORS.

Manchester, Clay County, Kentucky.

The Board of Jail Commissioners for Clay County invites sealed proposals for the erection and completion of a new Jail on the county's property, agreeable to plans and specifications adopted by said committee.

Said plans will be on file on and after 20th day of February, 1912, in the County Judge's office, in the Courthouse in Manchester, Ky. A copy of said plans and specifications will be furnished to anyone wanting to bid on said Jail by leaving a certified check with T. J. Rawlings, chairman of the jail committee, said check to be returned when the plans and specifications are returned in good order.

Bids will be received until 12 P. M. April 1, 1912; same should be plainly marked "Proposal for New Jail," and addressed to T. J. Rawlings, Chairman of Jail Committee.

Each bid must be accompanied by a certified check for \$1000 on some well-known bank, made payable to T. J. Rawlings, as evidence of good faith, and if their bid is accepted, as a guarantee that they will enter into contract at once and give an acceptable bond in sum of \$20,000 for the faithful performance of the contract. Should they fail to enter into contract, the check will be forfeited to Clay county as liquidated damages by reason of the delay.

The Fiscal Court will meet on the second day of April, 1912, and will accept whatever bid they think best for the county, but reserves the right to reject any and all bids.

T. J. RAWLINGS,
Chairman of Jail Committee for
Clay County, Kentucky.

Special Advertisements of General Interest.

GRANITE QUARRY FOR SALE OR LEASE

Well Adapted for Belgian Blocks and Crushed Stone

On line of railroad, accessible to Baltimore, Washington and Annapolis.

J. B. H. JEFFERSON, 3 Abell Building, BALTIMORE, MD.

N & W R.Y.

IRON AND MANGANESE PROPERTY

8000 acres, situated in Botetourt county, Virginia. The iron-ore lead has been proved for eight miles on this property. Both iron and manganese are high grade, as evidenced by following analyses:

Iron.	7.03	Manganese.	56.11
Iron	50.60	Silica	1.13
Phosphorus	1.43	Phosphorus	.380
Sulphur	.076	Iron	1.00
Manganese	1.22	Sulphur	.037

Property contains sufficient timber for mining purposes, two seams Virginia Anthracite Coal, also high-grade limestone. Good location. Near transportation. Price \$20 per acre. REFER TO FILE M-3754.

COTTON MILL WANTED

A progressive city in North Carolina, which has now in operation a number of successful cotton mills, desires to correspond with parties interested in the establishment of a large cotton mill. About one-half of the capital required to establish \$500,000 plant can be raised in that city. Parties interested in the establishment of such an enterprise will do well to REFER TO FILE M-3067.

If you desire information relative to the above or the resources tributary to the NORFOLK & WESTERN RAILWAY, write and ask to be placed on our mailing list and receive our industrial magazine, The Southern Homeseker and Investor's Guide, free for one year. Address F. H. L. BAUME, Agr'l and Ind'l Agent, Norfolk & Western Railway Co., Roanoke, Va.

COTTON YARN MILL

FOR SALE

Located in Texas. Two-story stone buildings 85x150 feet; 7070 spindles, complete equipment of modern machinery. 20 acres land, 20 houses for operatives.

Address YARNS,

care of Manufacturers Record.

BRICK PLANT IN CENTRAL FLORIDA

FOR SALE

Now operating to full capacity. Inexhaustible clay deposit. Good-paying investment, but present owner has good reasons for wishing to sell. Address

"BRICK PLANT,"
Care Manufacturers Record.

INVESTMENT OPPORTUNITY WANTED

Man with capital desires to enter established manufacturing concern and give service. Will also consider starting plant with experienced person. In replying give detailed information. Address

P. O. Box 4028, West Philadelphia Station, Philadelphia, Pa.

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SAVANNAH, GEORGIA

Fertilizer Manufacturing Center of the South

AND SIXTH LARGEST CITY IN EXPORTS IN THE UNITED STATES

THE LAND OF OPPORTUNITY. I am now offering factory sites which have access to all four railroads entering Savannah, and situated on the Savannah River, the only available water front near the city.

I have also a few choice farming propositions with railroad and water transportation. Write me for information.

FRANK WHITNEY, Room 207 Germania Bank Bldg., SAVANNAH, GA.

MISSOURI RED GRANITE QUARRY

FOR SALE

We desire to sell our quarry at Graniteville, Mo., in Iron County. Complete equipment and all appliances necessary to operate same. Also four miles of standard gauge railroad, including locomotives and all switching facilities. Business established since 1869. Sale to include everything and we retire from the business. We are now operating quarry.

SCHNEIDER GRANITE CO. 2140 De Kalb Street ST. LOUIS, MO.

Pine and Hardwood Timber Lands—Coal, Iron and Colonization Lands FOR SALE

in tracts 1000 to 50,000 acres each.

Favorably located in Virginia, West Virginia, North Carolina, Georgia, Florida, Alabama, Tennessee and Kentucky. All have been carefully cruised and estimated.

Capital furnished in large amounts for Public Service and Industrial Corporations, Coal, Iron, Steel, Electric Power and Drainage Companies, and other enterprises of assured merit and resources.

Correspondence invited.

W. H. GRANBERRY

20 Broad Street

NEW YORK

COMPLETE SAWMILL PROPERTY

FOR SALE

Sawmill property at Ford River, Mich., consisting of three-band saw mill, shingle mill, tie and post mill, lath mill, docks and trams, blacksmith shop and machine shop all stocked with tools, large store and office building, large boarding-house, large barns, sixty-three houses, lands, etc., all of which will be sold at a bargain. Apply to

THE I. STEPHENSON COMPANY,
Wells, Delta County, Mich.

Complete Saw Mill Plant, Dry Kiln and Logging Equipment

FOR SALE

Mill has a daily capacity of 25,000 feet. Logging outfit consists of Locomotive, three and one-half miles of tramroad and six log trucks. Eighteen to twenty million feet of choice Pine timber, well blocked. Mill located about 25 miles south of Savannah, on the Seaboard Air Line Railway. Fifteen to twenty million feet additional timber can be had in easy reach of this plant. For full particulars address

ALBERT FENDIG & CO., Brunswick, Ga.



Modern Factory Building for Sale

New; size 60x200; standard construction; spur track; cheap coal; natural gas assured; cheap labor; no unions; exemption from taxation; five acres ground; in best 10,000 population in South. Full information upon request.

MAER-STANLEY REALTY CO., Columbus, Miss.
Alfalfa Lands a Specialty.

SAW MILLS With TIMBER FOR SALE

An up-to-date, going plant; two mills; daily capacity, 200,000 feet; planing mills, box factory, lathe machinery, steel machine, log railroads; everything modern, fully equipped and in successful operation. Western white pine timber owned and controlled sufficient to run 40 years. Has always been profitable, and future seems equally promising. Location in Southwest; especially healthful and advantageous. A bargain; sale necessary to close estate. Terms reasonable. Purchaser should have \$400,000 cash or securities or more. Buy of owners at bed-rock prices.

E. S. GOSNEY, Administrator
PASADENA, CALIF.

Foundry and Machine Shop

FOR SALE

Located on railroad in Southwest Virginia, in the heart of immense electric power development and in the midst of iron furnaces, coal mines and coke ovens. Excellent equipment and substantial buildings. Will sell entire plant or equipment with privilege of use of buildings at reasonable rent.

WYTHEVILLE IRON WORKS, Inc.
WYTHEVILLE, VA.

Terminals, Mills and other Properties at Moss Point, Miss.

FOR SALE

The properties of W. Denny & Co. of Moss Point, Miss., consisting of three sawmills, mill sites and all improvements at Moss Point, and also the Pascagoula Northern Railroad, 43 miles in length and extending from L. & N. Railroad at Pascagoula to the New Orleans, Mobile & Chicago Railroad at Evanston, Miss., together with its rolling stock and equipment, will be sold at public auction for cash on the 1st day of April, 1912, at Pascagoula, Miss., by Trustees under Deeds of Trust. The property will be sold as a whole or en bloc.

For information apply to
L. M. Pool, Hibernia Bank & Trust Co., New Orleans, La.
Henry Hall, First National Bank, Mobile, Ala.
Ford, White & Ford, Pascagoula, Miss.
J. J. McIntosh, Manager, Moss Point, Miss.

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Business Opportunities, Timber Lands, Realty Investments

We will take pleasure in submitting information pertaining to either of the above departments.

S. L. NUSBAUM & CO.
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WILL TRADE

One Beaman & Smith Boring and Facing Machine. Will bore 12 inches in diameter, 24 inches long, and face to 20 inches in diameter. Machine is complete with counter-shaft, boring bars and facing spindles. Can be seen at 35 Warren St., New York. Rider-Ericsson Engine Co.

Bargains in Machinery and Supplies.

FOR SALE

- 1 Ide Engine, 20"x24".
- 1 Skinner Engine, 18"x18".
- 3 Porter Center-Crank Engines, 9".
- 6 Boilers, 50"x22", 12 6" flues.
- 2 Boilers, 50"x22", 12 6" flues.
- 4 Boilers, 50"x22", 12 5" flues.
- 1 Cameron Pump, 1 1/2" discharge.
- 2 Heald & Sisco Pumps, No. 6.
- 1 Ingersoll Drill, 3 1/2".
- 6 J. C. Clark Pulverizers.
- 1 H. K. Porter Locomotive, 39 1/2" gauge.
- 1 Rand Straight-Line Air Compressor.
- 2 Dodge "Eureka" Water Softener.
- 2 Sturtevant Blowers.

Address

UNION CEMENT & LIME CO.,
Louisville, Ky.

EQUIPMENT To Be Sold Quick

One each R. H. and L. H. Hamilton Corliss Engine, 16x36, 150 H. P., 90 R. P. M., new in 1894, in A-1 condition, with heater, condenser, lubricator, etc. Price, \$800 each on the spot. Can be seen at Springfield, Mass. Also, two belted G. E. 100 K. W. 500-volt Dynamos, with Switchboard, complete, \$400 each.

Must be moved before April 1. Other sizes Corliss and high-speed engines.

Large variety of Lathes, Planers, etc.
H. D. WARNER,
Bristol, Conn.

FOR SALE OR RENT

1 30-ton Little Giant Special High Crane Traction Steam Shovel. 1 28-ton Little Giant Traction Steam Shovel. 1 No. 0 Traction Steam Shovel. 1 No. 1 Traction Steam Shovel. 2 10x16" Porter 36" S. T. Locomotives. 2 10x16" Baldwin 36" S. T. Locomotives. 1 12 1/2"x22" Baldwin 4-driver S. G. S. T. Locomotives. 2 10-ton 3-wheel New York Steam Rollers. 1 3-ton Tandem Universal Puddle Roller. 1 2 1/2-ton Tandem Iroquois Asphalt Roller. 7 Steel Guy Derricks, 70' masts. 2 2-yd. Hayward Orangepeel Buckets. 1 3-yd. Hayward Clamshell Bucket. 1 1 1/2-yd. Hayward Clamshell Bucket. 5 Lambert D. D. Boom Swing Electric Hoists, 40 and 60 H. P., D. C. 220 volts. 40 Hoisting Engines, Lidgerwood, Mundy and Lambert, skeleton, mounted, with and without boom swings, from 6 to 100 H. P. Air Compressors, Pumps, Boilers, Engines, Rock Crushers, etc. Get our price on new derricks before purchasing.

HENRY A. HITNER'S SONS CO.,
Philadelphia, Pa.

FOR SALE—CHEAP

Gas Producer Plant

1—115 H. P. 4-cylinder Bruce-Macbeth Producer Gas Engine. 1—125 H. P. Wile Producer. Complete in detail. Used a short time only. Absolutely good as new. Price for the outfit \$2000 f. o. b. cars Chicago.

PFANNMUELLER ENGINEERING CO.
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FANS FOR SALE

Four—Sturtevant Fans with Sirocco runners. Approximate 60,000 cu. ft. of air per minute x 2" W. G. pressure. Driven by 4 Sturtevant 10 x 18 x 10 compound engines direct connected.

Six—Sirocco Fans.

Approximate 60,000 cu. ft. of air per minute x 2" W. G. pressure.

In good working condition. Can be seen at 39th street and 1st avenue by applying to Mr. R. Darlington.

THE NEW YORK EDISON CO.

NEW YORK CITY, N. Y.

SLIDE VALVE ENGINE

FOR SALE

One James Beggs Company's 8"x10" Slide Valve Engine in good condition.

AMERICAN RAILWAY SUPPLY CO.,
24 Park Place, New York.

Bargains in Machinery and Supplies.

DYNAMOS and MOTORS

Direct Connected Units Belted Generators Alternating Current Motors Direct Current Motors

300 OF THEM

Thoroughly overhauled and fully guaranteed.

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We Buy, Sell, Repair, Rent or Exchange.

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124 N. 3rd St., Philadelphia

FOR SALE

One 20" x 24" x 13 1/2" x 20" Norwalk Compressor. One 13" x 12" Ball Engine. One 15" x 14" Ball Engine. One 24" x 4" Corliss Engine. One 14" x 18" Center-Crank Slide-Valve Engine. One 7" x 10" D. C. D. Hoisting Engine and Boiler. Three 5" x 8" Double-Drum Hoisting Engines and Boilers. One 6 1/2" x 10" Double-Drum Hoisting Engine and Boiler. One Deane 12 and 20" x 10 1/2" x 12" Duplex Piston Pattern Pump.

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Machine Tools

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5" x 4" Star, plain rest. 15" x 10" Putnam, compound rest, P. C. F. 15" x 10" Flather, compound rest, P. C. F. 15" x 10" Prentiss, compound rest, P. C. F. 20" x 10" Pratt & Whitney, compound rest. 21" x 14" Powell, compound rest, P. C. F. 24" x 14" Reed, high speed. 18" x 8" Lodge & Shipley, compound rest. 20" x 10" Prentiss, compound rest, P. C. F. 20" x 10" Putnam, C. R., P. C. F. 20" x 10" Gleason, compound rest, taper. 20" x 12" Pond, C. R., P. C. F. 22" x 12" Bement-Miles, C. R., triple geared. 20" x 10" Reed, compound rest, P. C. F. 20" x 10" Newark, triple geared, C. R., P. C. F. 20" x 10" Fitchburg, T. G., C. R., P. C. F. 20" x 10" Fitchburg, C. R. 18" x 12" Bement, compound rest, T. G.

SCREW MACHINES.

12" x 14" Jones & Lamson, flat turret. 12" x 14" Gardner & Oliver, friction head. No. 2 7/8" Warner & Swasey, wire feed. No. 2 1/2" Garvin, wire feed, friction head. No. 1 Garvin, wire feed. 1" National Acme, automatic. 1" Gridley, automatic. No. 6 Brown & Sharpe, friction head. No. 6 Warner & Swasey, wire feed. 1" Smurr & Kamen, wire feed. 1 1/2", 1", and 2 1/2" Pratt & Whitney automatics. 2 1/2" Pearson, wire feed. 2" Pratt & Whitney, screw shaver.

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No. 15 Brainerd, small universal. No. 4 1/2" Becker, small plain. No. 3 Cincinnati, universal. No. 2 Le Blonde, plain, back gears.

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Ready for Immediate Shipment

1 Class "J" Ingersoll & Rand Belt-Driven Air Compressor; size of cylinders, 16 1/4 x 16 and 25 1/4 x 16 1/4.

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1 14x42 Frazer & Chalmers Corliss Engine.

1 66x16 Horizontal Triple-Riveted Butt-Strap Boiler, 120 pounds pressure.

1 42x14 Horizontal Triple-Riveted Boiler, 120 pounds pressure.

1 35 H. P. Erie City Economic Fire Box Boiler.

1 50 H. P. Fairbanks-Morse Gasoline Engine.

1 20 H. P. Lima Gas or Gasoline Engine.

1 20x12x16 1500-gallon capacity Underwriter's Fire Pump.

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1 No. 3 Armstrong Manufacturing Co. Power Pipe Machine, capacity up to 6", 1000 to 8000-gallon capacity Storage Tanks.

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The best and the cheapest. Let me know what you have for sale and what you want to buy.

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You will have a good selection, of quick delivery and the lowest of prices consistent with the conditions and values. Permit us to give you details, or send for our complete list.

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1 27" x 18" "Armington & Sims," C. C. \$1500
1 16 1/2" x 10" "Weston," C. C. \$550
1 12" x 12" "Erie Ball," C. C. \$550
1 12" x 12" "Atlas," C. C. \$200
1 10" x 12" "Atlas," C. C. \$125
1 12" x 24" "Whitehill," girder frame, R. H. \$500
1 6" x 24" "Cooper," girder frame, L. H. \$500
1 18" x 12" "Watts-Campbell," girder frame, L. H. \$3500

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1 20" x 100" "Erie City," S. C. \$500
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1 12" x 12" "Erie Ball," C. C. \$550
1 12" x 12" "Atlas," C. C. \$200
1 10" x 12" "Atlas," C. C. \$125
1 10" x 10" "Metropolitan," S. C. \$160
1 8 1/2" x 11" "Farquhar" Ajax, C. C. \$140

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1 250 H. P. "Heline," water tube. \$1250
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27 in. x 10 ft. Lodge & Shipley, Q. C. G.

36 in. x 12 ft. Lodge & Shipley, Q. C. G.

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J., care Manufacturers Record.

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Thirty-seven Thousand

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FOR SALE—LOGGING EQUIPMENT
 Climax 22-ton Locomotive, 36", steam brake; cheap. Climax 20-ton Locomotive, 36", 20 tons, first class. Shay 28-ton Locomotive, 4' 8½" steam brake; cheap. Baldwin Logging Engine, 4' 8½", 4 drivers, 2-wheel rear truck; overhauled. Climax 18-ton Locomotive, 36", built 1906; 9 Log Cars; very cheap. Shay 70-ton Locomotive. Address
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Steam Shovels, Dredges, Drag Line Excavators, Wrecking Cranes, Unloading Plows, Loco Pile Drivers.

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 4 10'x16" 62½ gauge Locomotives (will change gauge to suit).
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One No. 7 and one No. 8 Star Drilling Machine, guaranteed to be in first-class condition and subject to inspection, with tools, to drill to any depth and any size, including two new unused stems 5" and 5½" diameter. All kinds of fishing tools and equipment for well drilling.

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RAILROAD TANK VALVES AND TANK FIXTURES.

FLOAT OR AUTOMATIC INLET VALVE FOR TANKS.

SWITCH STANDS FOR ALL PURPOSES. WATER METERS.

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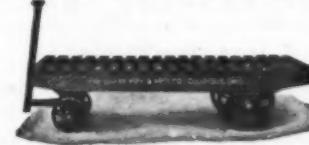
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OF ALL KINDS, FOR ALL PURPOSES



Style 44

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- 1 600-gal. Studebaker sprinkler wagon, 8½" tires.
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- 1 40 H. P. Atlas engine, band wheel 16" face, 16" diameter.
- 1 10 H. P. Erie engine, 10x16.
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- 1 lot of vertical steam engines, under 50 H. P.
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- 2 Fairbanks type A reciprocating pumps, gasoline.
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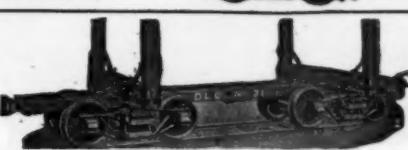
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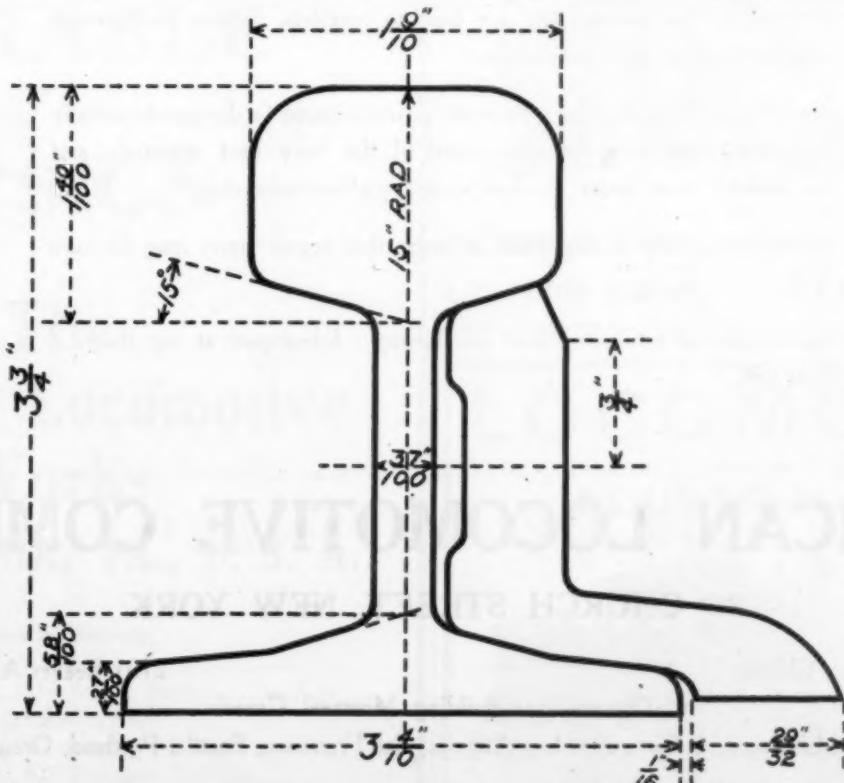
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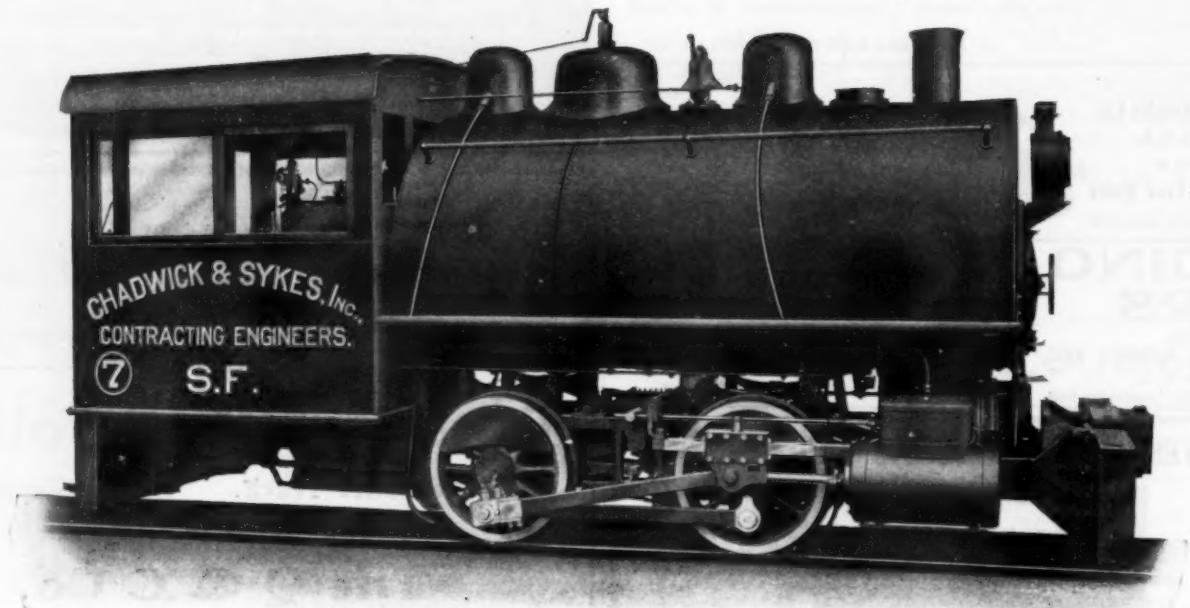
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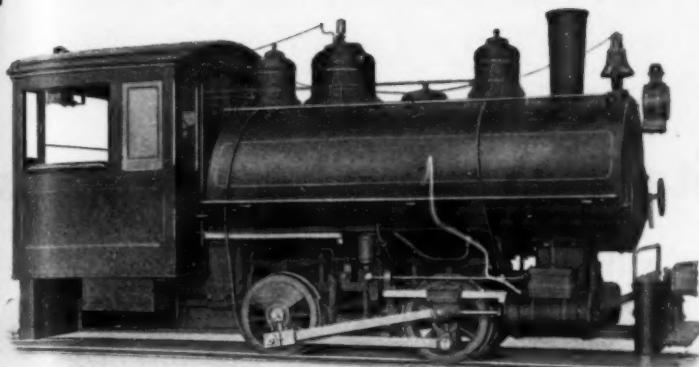
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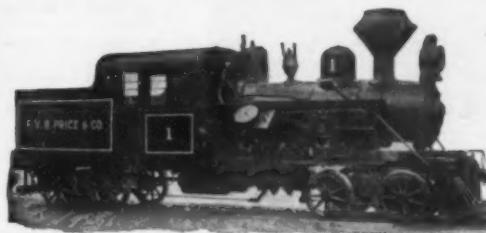
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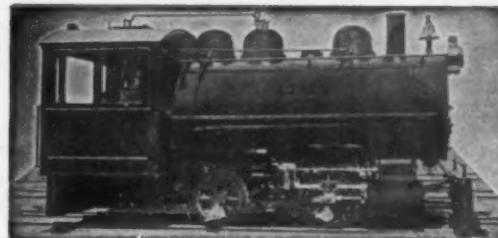
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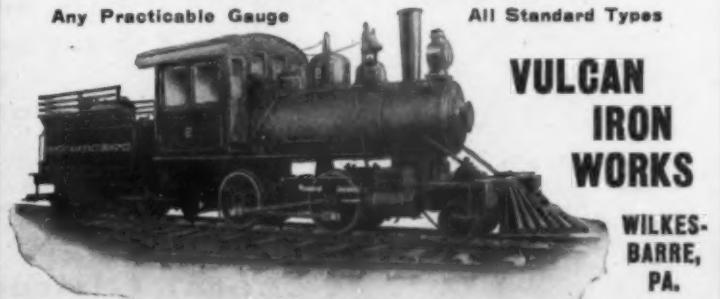
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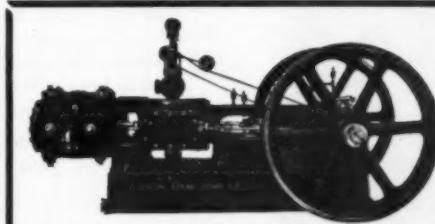
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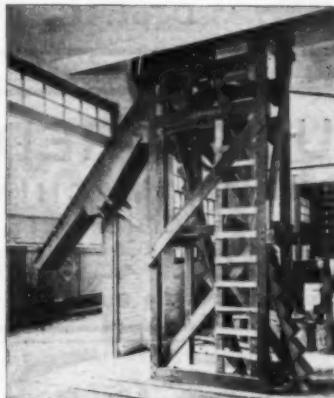
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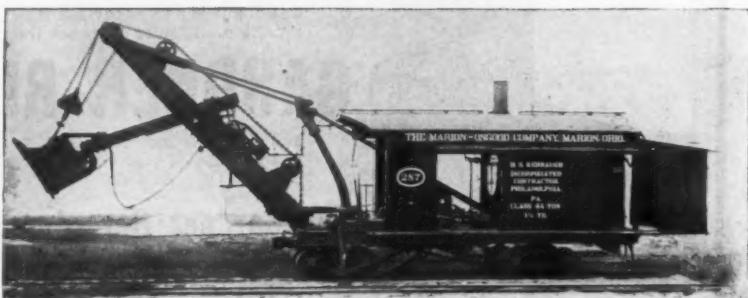
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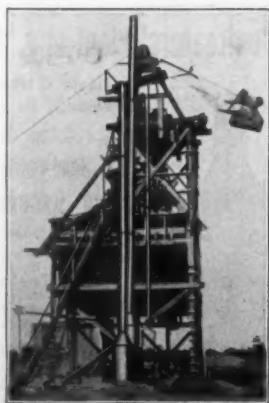
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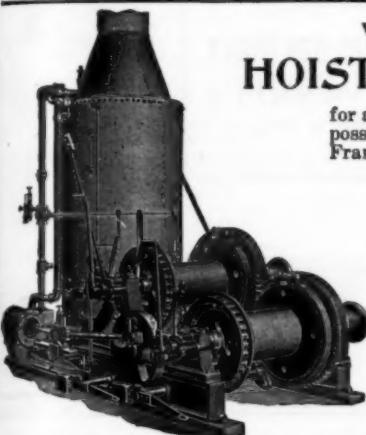
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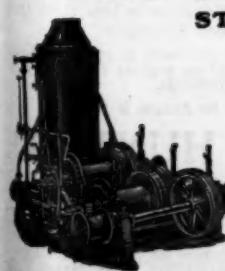
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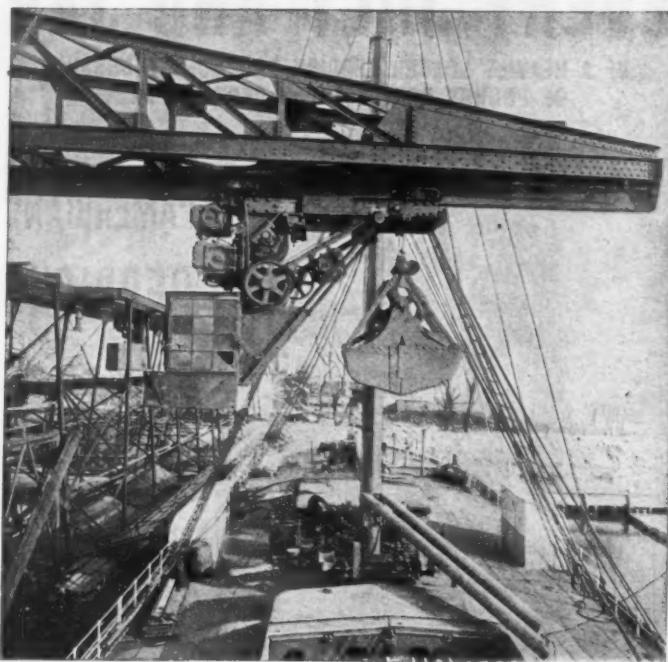


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A Bucket for Every Type of Operating Device

In addition to a type of Bucket to overcome the conditions of each particular class of work, you will find Hayward Buckets used on the greatest variety of operating devices. The reason is simple—manufacturers of special apparatus realize that the Bucket end of their equipment is too important to be slighted—that it *must* be the best on the market. Hence, you will always find

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Orange Peel—Clam Shell

on such operating devices as

Telpher Systems	Locomotive Cranes
Cableways	Electric Hoists
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and wherever maximum efficiency is demanded.

No better illustration can be shown of this than the above view, picturing as it does a Sprague Electric Hoist, equipped with a 1 cu. yd. Hayward Class "E" Clam Shell Bucket, unloading iron pyrites from ships.

This entire machine is operated by one man. With this equipment the Bucket has a capacity of 520 tons per ten-hour day—this with a maximum lift of 50' and a distance between loading and unloading points of about 70'. A remarkable capacity considering the fact that the material handled—iron pyrites—averages 150 lbs. per cubic foot in weight.

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Buckets, Skips, Industrial Cars, Asphalt Melters, Hand Dump Carts, etc., are on the market 35 years.

They have a most excellent reputation.

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The Robins Belt Conveyor was the original and is today the standard of this type of conveying machinery.

It is successfully and economically conveying ore, rock, coal and similar materials under the most trying conditions of service.

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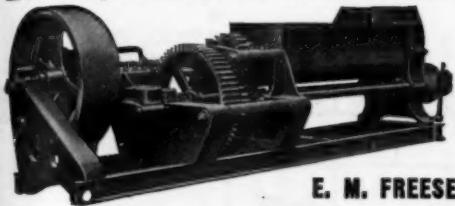
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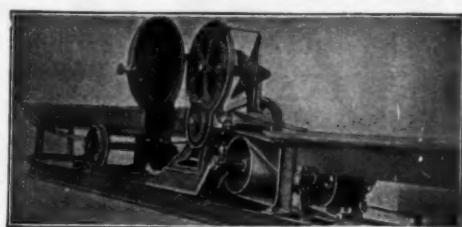
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Another Old Pitch Filled Street

The above photograph shows a street in Saginaw, Mich., that was laid in 1893, the joints being filled with Barrett's Paving Pitch. Recent work in relaying the street car tracks shows the 19-year-old pitch still in position and giving entirely satisfactory protection to the foundation.

Such instances as this demonstrate the fallacy of the statement sometimes urged that pitch is unstable and likely to flow away to the gutters in hot weather!

Pitch is, of course, more plastic than asphalt, but this is an advantage, not a defect. Pitch provides ideal opportunity for expansion and contraction. "Every joint is an expansion joint" and the pitch-filled pavement never bulges up from expansion or cracks from contraction.

Unlike cement filler, pitch does not make a monolith of the pavement, and cracks and explosions are accordingly impossible.

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Unlike asphalt, pitch stays watertight year after year, having strong adhesive power.

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The pitch-filled pavement is ready for use as soon as it is laid.

No special skill is needed in handling the pitch—the job is always successful.

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The heaviest loads do not affect them.
Carefully made and thoroughly tested before shipped.

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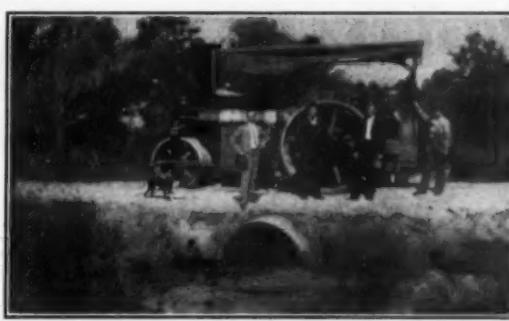
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MADE OF
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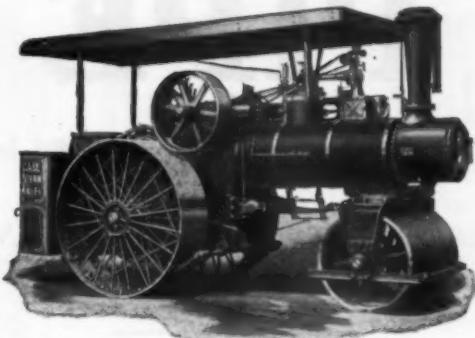
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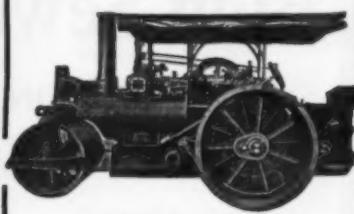
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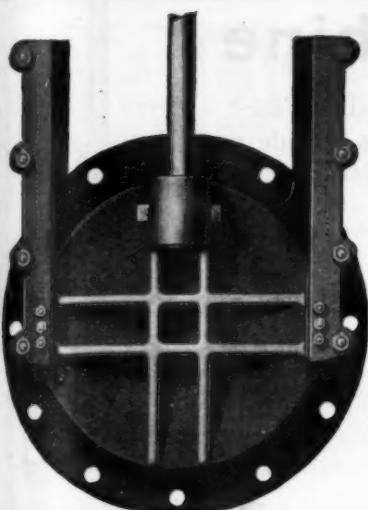
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PIPE CUTTING AND THREADING MACHINES

All Sizes for Pipe Mills
Gas and Steam Fitters

This cut illustrates No. 5 and No. 6 Machines.

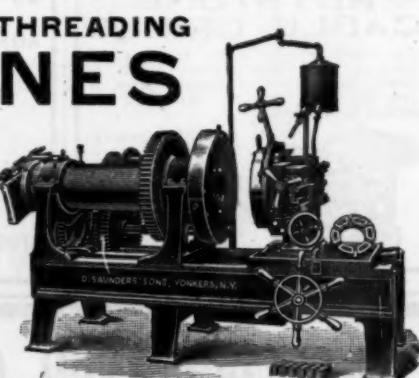
No. 5 has a range of 1 1/4 to 6".

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Fig. 37



Fig. 68

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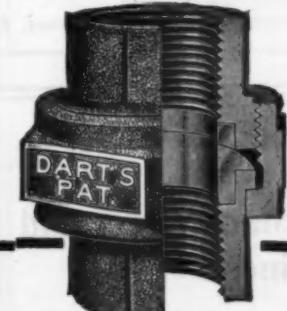
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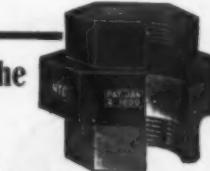
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Have Bronze to Bronze at the Joint—No Corrosion.

This construction is embodied in our Flange Elbow, Tee, Male and Female and Air Pump Unions. Ask for circular and sample.

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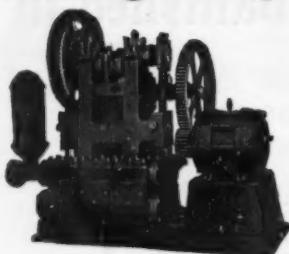
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Good
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Deming Triplex Power Pump direct connected to electric motor.

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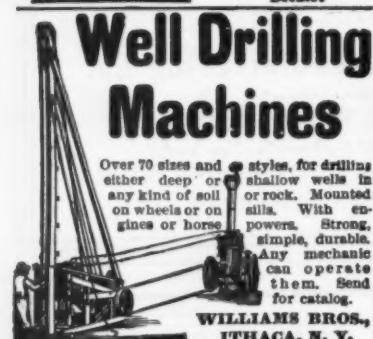
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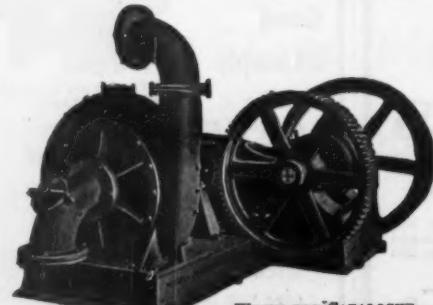
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Samson Water Turbine

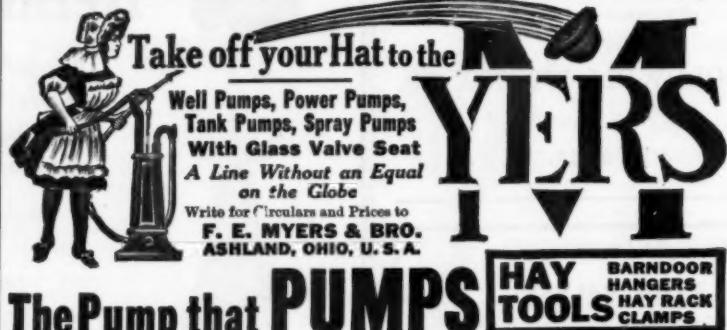
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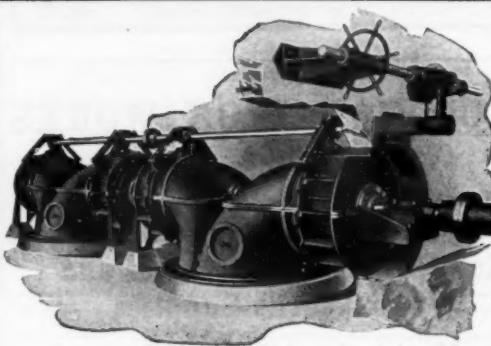
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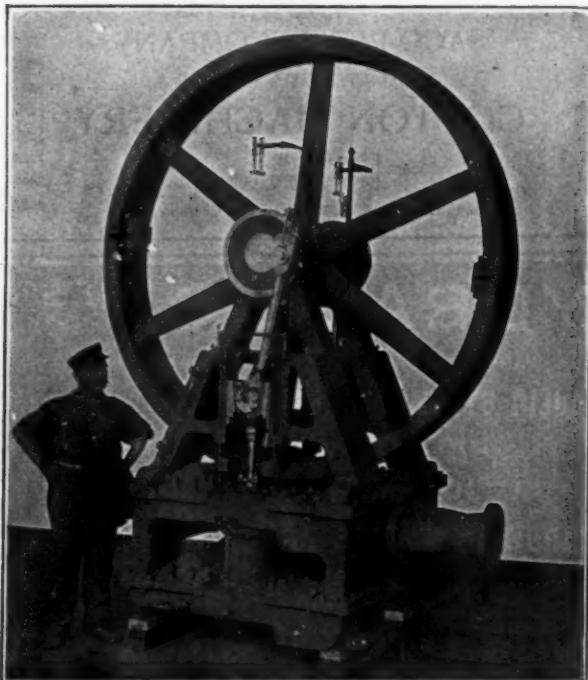
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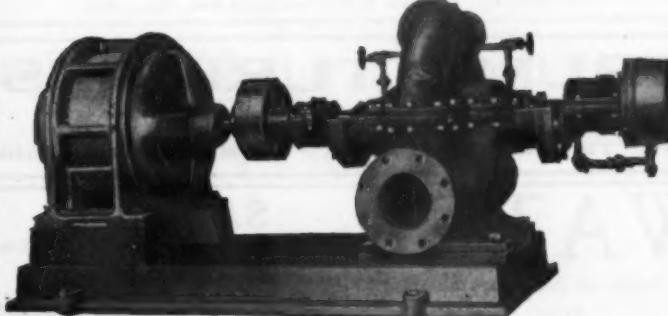
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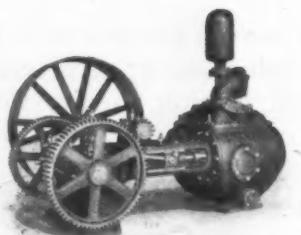
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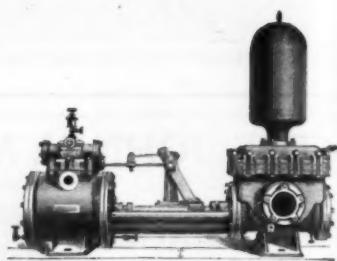
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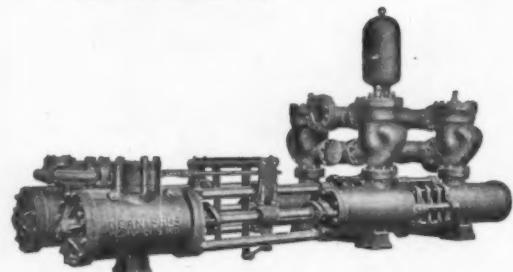


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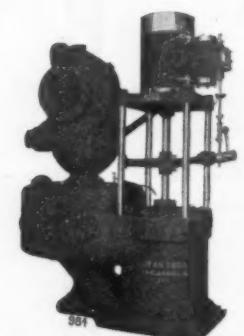
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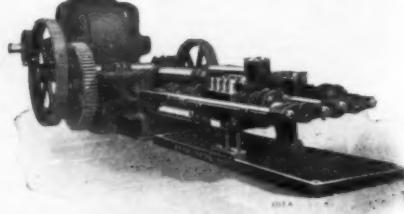
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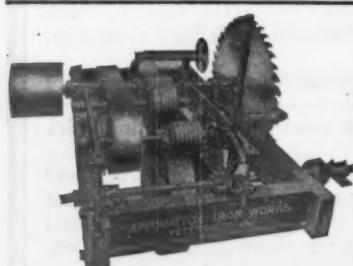
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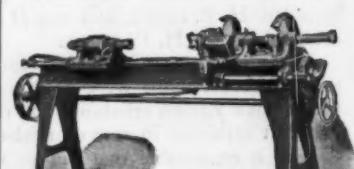
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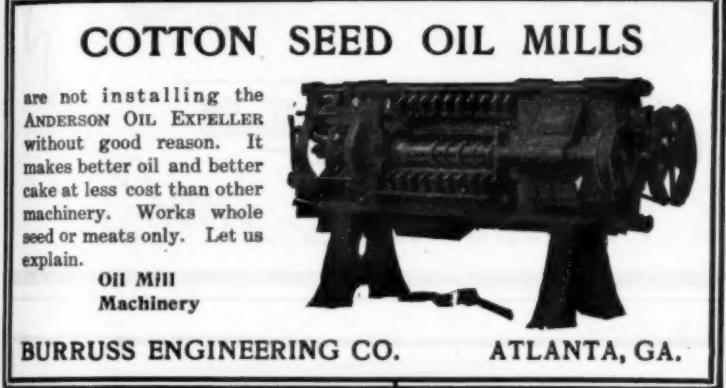
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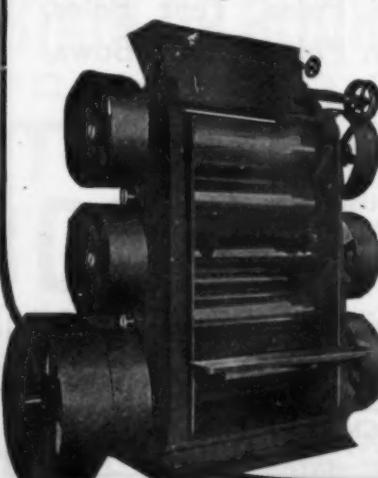
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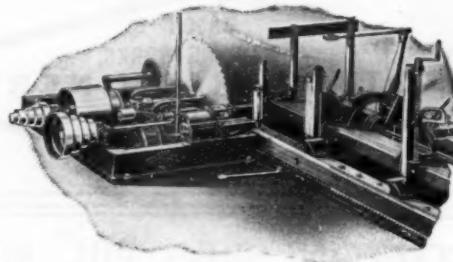
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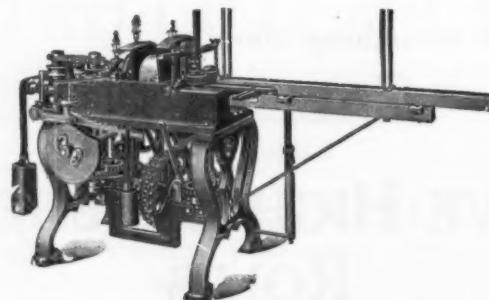
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Fig. 627.

Fig. 628.

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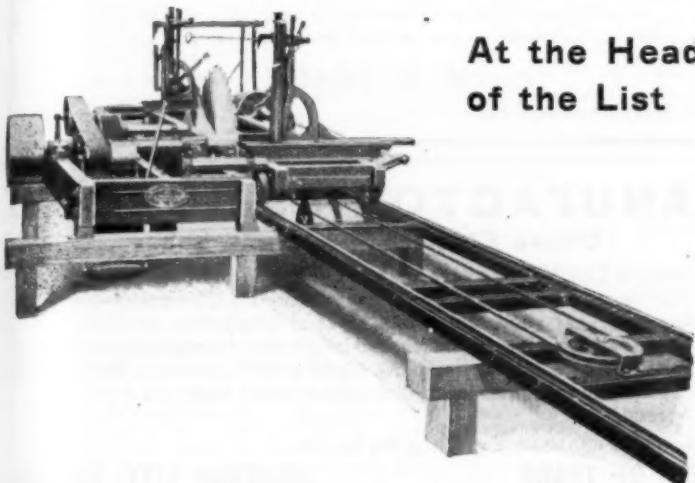
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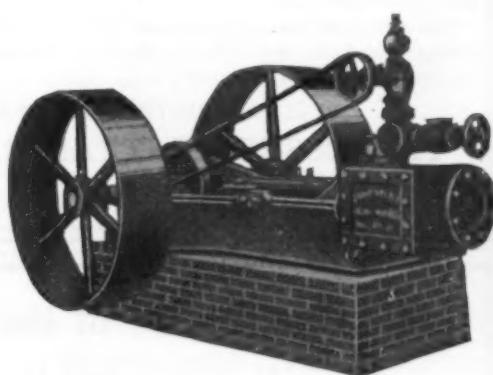
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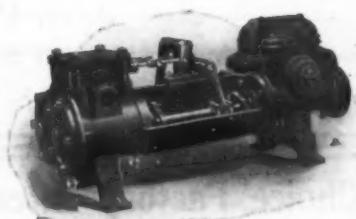
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Wholesale Hardware House is needed in a city having excellent railroad facilities and a very thickly-populated outlying agricultural territory. Refer to file 40145-A.

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The progress that this district has made along industrial, commercial and agricultural lines during the past few years is but an indication of the prosperity that will mark its future. In it is the rational location for your factory. Any information you desire will be sent gladly and promptly upon request.

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Necessity

It is necessity which makes all of America's industries possible. The needs of mankind create a demand for numberless commodities, and thus factories are enabled to flourish. The manufacturer must seek the location which is most favorable to the operation of his plant, because competition makes this necessary. Following are a few reasons why fruit canneries are a necessity of the Southwest and why Texas City is the most favorable location for such an industry.

It is a well known fact that climatic conditions of Southwest Texas are very conducive to the successful cultivation of a great variety of fruits. It is a fact, equally well known, that the process of decay sets in on the ripened fruit a good deal quicker here than in the colder climate of the North. As a result, bushels upon bushels and tons upon tons of fruit are annually lost to mankind, all or nearly all of which might be saved by canning.

Two hundred thousand people are annually pouring into the State of Texas. The greater number of these are locating in the Gulf Coast district in the vicinity of Texas City. The development of this section has, as a result, been so marked and rapid as to render the few factories located here utterly inadequate to meet the growing demands. That is why we say

Fruit Canning

are a necessity of the Southwest and that Texas City is the most favorable spot in the Texas Gulf Coast district.

A further reason is that Texas City is located directly in the heart of a rapidly developing fruit section. Thousands of acres are being cut up into five and ten acre tracts and are being set out to fruit trees. Thousands of dollars in freight charges and in the loss resulting from bruised and decayed fruit might be saved to the grower if canneries were on the ground, to say nothing of the saving to consumers if the cost of transportation were eliminated.

her important proposition is the fact that at Texas City is being installed the finest and most up to date dock, warehouse and Terminal system on the American seaboard. Established steamship lines operating between Mexican and Central and South American points makes it possible to bring in various tropical fruits from these countries at the lowest possible cost, and the lines to New York, Boston, Baltimore, Liverpool, Havre and Bremen put the cannery in direct communication with the markets of the world.

Full Information Distributed by
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West Virginia, lying between the Atlantic Seaboard and the great Ohio River, fairly teems with opportunities for profitable industrial development.

No other State in the Union possesses more natural advantages in the way of raw materials necessary in the manufacture of the many articles used in the every day affairs of life—those made of wood, and iron, and clay, and sand, and stone—the useful things upon which the human race so largely depends.

Nor does any other State rival it in the matter of economical manufacture—the turning these raw materials into finished products.

In this transformation, which men call manufacturing, the two great requisites are heat and power.

Therefore, when you speak of heat and power your mind naturally turns to the place in which these may be obtained most conveniently and most economically, and that is West Virginia.

Add to cheap and plentiful raw materials and heat and power, easily accessible markets, and the best of facilities for reaching them, and the conditions need little more to render them ideal.

The location of West Virginia with respect to the centers of population East and West fulfills the former of these added requisites, and the Baltimore & Ohio Railroad, with its many lines and its superb equipment, furnishes the latter.

Write and inquire concerning the many advantageous locations along the Baltimore & Ohio lines in West Virginia. The Industrial Department will cheerfully furnish detailed information.

Baltimore & Ohio Railroad

W. W. Wood, Industrial Agent

Baltimore, Md.

Clinchfield's Diversified Mineral Resources

A Basis for Many Profitable Industries

Throughout that section of Southwestern Virginia, Eastern Tennessee and Western North Carolina traversed by the Clinchfield there is a vast wealth of diversified mineral resources that would prove the basis for the operation of many profitable industries.

Some of these resources are being developed, but none of them in keeping with their quality and quantity.

Among the many important minerals of which there is an unlimited supply are

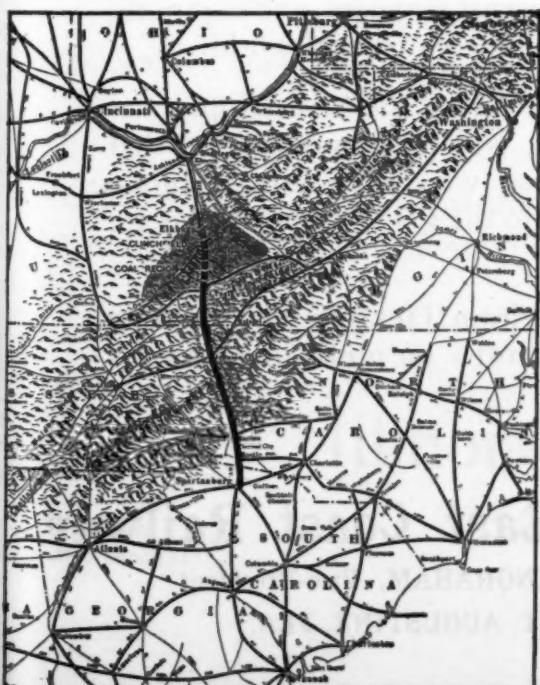
Kaolin	Mica	Feldspar	Marble	Clay
Quartz	Talc	Limestone	Barytes	Shales

Ready markets are accessible both for raw materials and the many products that can be made from them.

Here also can be found plenty of good white labor, an abundance of fine water, cheap power and a delightful invigorating climate.

These mineral-bearing lands can be purchased *now* at reasonable prices; consequently, it behooves the manufacturer or investor to investigate the situation immediately.

Careful investigations, extensive prospecting and detailed reports have been made upon the Clinchfield mineral resources by recognized authorities.



Full information as well as every co-operation will be given responsible parties desiring to study the opportunities available.

Carolina, Clinchfield & Ohio Rwy.

"THE ROAD OF OPPORTUNITY"

J. J. Campion,
V.-P. and Traffic Manager

R. F. Brewer,
Industrial Agent

Johnson City, Tenn.

Florida's Compelling Call to Men of Energy and Enterprise

Florida has been regarded as the land of romance, the home of adventure, the scene of out-door pleasures innumerable.

It is famed as the happy hunting ground of the sportsman, the paradise of the fisherman, the eden of the florist, the land of delight for the naturalist.

All of which have combined to make Florida the "winter playground of the nation," and an ever-swelling number of visitors crowd its railroads and its hotels every year.

It has been and is all of these—in all of these capacities it is unapproached and unapproachable.

But it has latterly become more—much more.

It is the home of ambitious, purposeful men and women—of active, energetic, enterprising people who, looking from all parts of the country, have seen in Florida greater opportunities than elsewhere for building homes, establishing businesses and amassing fortunes.

It has become one of the most progressive states of the Union—its population increased 42.4 per cent. from 1900 to 1910, while the value of its twelve leading farm crops increased 126 per cent., the capital invested in its manufacturing enterprises 152 per cent. and the value of its factory products 112 per cent. in the same time.

Not only so, but the railroad mileage of Florida has grown from 2738 in 1900 to about 5,000 in 1912.

So that the State that has so long lured those who loved it for its flowers, its game, its fish and its myriad invitations to enjoy life out of doors, is now proving still more attractive to those bent upon life's more earnest purposes, and is rapidly taking a place of great importance in the industrial and commercial world.

But with an area larger than any other Southern State east of the Mississippi river save one, Florida is much the smallest in population, and the opportunities that have been seized and turned to good account by those who have already gone there are few in proportion to those that lie ready to the grasp of those who are yet to go.

There is hardly a mile of the East Coast of Florida, from Jacksonville to Long Key, that does not present its own individual opportunity for profit in manufacturing or agricultural pursuits.

Information about this wonderful country cheerfully furnished those who write for it.

Florida East Coast Railway

J. E. INGRAHAM, Vice-President
ST. AUGUSTINE, FLA.

A Land Rich in Resources For Investment and Development

No other section of the country presents so many opportunities for success as those portions of Mississippi and Louisiana traversed by the Illinois Central Railroad.

For farming and truck growing the qualities of soil and climate meeting there make it the ideal spot, for, from the corn fields of the western prairies to the cotton plantations of Georgia no other section produces any crop that cannot be produced there, and most of them in larger quantity per acre elsewhere.

For manufacturing enterprises of many kinds the raw materials found cheaply at hand, together with the great supply of low priced labor, and the best of shipping facilities to large centers of consumption create a condition not readily duplicated in any other section.

For mercantile establishments of every variety the rapidly growing communities, with cities lying far apart, furnish customers with many demands.

For the investment of money the millions of acres of lands, rich in soil and timber, and still held cheaply by their owners, offer profits both large and sure.

The Illinois Central Railroad has for many years been devoting much effort to building up the agricultural, manufacturing and general business interests of the territory it traverses and its efforts have met with great success; but there are many more opportunities still open than have been utilized.

The industrial department of the road is ready to furnish information to anyone interested concerning any portion of the country through which its lines run. If you are interested in learning about them write us and the information will be promptly furnished.

*Louisiana
and
Mississippi
Present
Marvellous
Investment
Opportunities*

Illinois Central Railroad
Chicago, Ill.

*J. C. Clair,
Industrial
and
Immigration
Commissioner,
Chicago, Ill.*

CLASSIFIED INDEX OF ARTICLES ADVERTISED

Abrasive Materials.

Abrasive Material Co., Philadelphia, Pa.
Carborundum Co., Niagara Falls, N. Y.
Norton Co., Worcester, Mass.
Vitrified Wheel Co., Westfield, Mass.

Accountants.

Baltimore Audit Co., Baltimore, Md.
Cruselle Audit Co., Inc., Atlanta, Ga.
Interstate Audit Co., Washington, D. C.
Neville, Chas., Savannah, Ga.

Adding Machines.

Adder Machine Co., Wilkes-Barre, Pa.
Burroughs Adding Machine Co., Detroit, Mich.

Agents. (Manufacturers')

Allen, Herbert F. L., Washington, D. C.

Agricultural Implements.

Appomattox Iron Wks. & Sup. Co., Petersburg, Va.
Myers & Bro., F. E., Ashland, O.

Air Compressors. (Stationary and Portable.)

Allen, Herter F. L., Washington, D. C.
American Air Compressor Co., New York, N. Y.
American Compressor & Pump Co., Baltimore, Md.
Blaudell Machinery Co., Bradford, Pa.
Chicago Pneumatic Tool Co., Chicago, Ill.
Garver Governor Co., Quincy, Ill.
General Electric Co., Schenectady, N. Y.
Ingersoll-Rand Co., New York, N. Y.
Nagle Corliss Engine Wks., Erie, Pa.
Quincy Engine Co., Quincy, Pa.
Union Steam Pump Co., Battle Creek, Mich.

Air Motors.

Ingersoll-Rand Co., New York, N. Y.

Aluminum Products. (Bars, Sheets, Tubes, etc.)

Aluminum Company of America, Pittsburgh, Pa.

Alendum Wheels.

Norton Company, Worcester, Mass.

Annealing Boxes.

Wilfong Iron Works Co., Millard F., Philadelphia, Pa.

Anti-Friction Metals.

Bailey-Lebby Co., Charleston, S. C.
Dodge Manufacturing Co., Mishawaka, Ind.
Gilbert & Sons Brass Fdry. Co., A., St. Louis, Mo.
Phosphor-Bronze Smelting Co., Phila., Pa.
Virginia Railway Supply Co., Norfolk, Va.

Anti-Rail Creepers.

Q. & C. Co., New York, N. Y.

Architects.

Cain, Shepherd & Peale, Richmond, Va.
Lockwood, Greene & Co., Boston, Mass.
McLaughlin & Johnson, Lynchburg, Va.
Milburn, Heister & Co., Washington, D. C.
Nichols, Charles H., New York, N. Y.
Pettit, Jr., Chas., Godfrey, Danville, Va.
Scriine, J. E., Greenville, S. C.

Architects' Supplies.

Keuffel & Esser, Hoboken, N. J.
Starrett Co., L. S., Athol, Mass.
Weber & Co., F., Philadelphia, Pa.

Architectural Iron and Sheet Metal Work.

Bolles Iron & Wire Works, J. E., Detroit, Mich.
Chesapeake Iron Works, Baltimore, Md.
Des Moines Bridge & Iron Co., Des Moines, Ia.
Schreiber & Sons Co., The L., Cincinnati, O.
Sned Architectural Iron Works, Louisville, Ky.

Art Glass.

Bluswanger & Co., Memphis, Tenn.

Art Glass and Prisms. (Set in Zinc and Copper.)

Sleiss Art Glass Co., G. A., St. Louis, Mo.

Asbestos.

Carolina Portland Cement Co., Charleston, S. C.
Johns-Manville Co., H. W., New York, N. Y.
Southern Pipe Covering Co., Inc., Richmond, Va.

Asphalt.

Armitage Mfg. Co., Richmond, Va.
Barber Asphalt Paving Co., Philadelphia, Pa.
Gulf Refining Co., Pittsburgh, Pa.
Texas Co., The, New York, N. Y.

Asphalt Melters.

Stephens Iron Works, G. L., Long Island City, New York, N. Y.

Automobiles. (Motor Trucks.)

International Motor Co., New York, N. Y.

Axes.

[See Car Wheels, Axles and Trucks.]

Babbitt Metal. (See Anti-Friction Metal.)

Badges. (Hat and Breast, Electric and Steam Road, Police and Fire Dept.)

American Railway Supply Co., New York, N. Y.

Bakers' Machinery.

Lynn Superior Co., The, Cincinnati, O.

Bankers and Brokers.

Baltimore Trust Co., Baltimore, Md.

Barr, J. H. C., Philadelphia, Pa.

Delaware Trust Co., Wilmington, Del.

Electric Bond & Share Co., New York, N. Y.

Glean, W. S., Spartanburg, S. C.

Halsey & Co., N. W., New York, N. Y.

Lisman & Co., F. J., New York, N. Y.

Mercantile Trust & Deposit Co., Baltimore, Md.

New First National Bank, Columbus, O.

Nuveen & Co., John, Chicago, Ill.

Savannah Bank & Trust Co., Savannah, Ga.

Siebel & Co., H. F., Philadelphia, Pa.

Skinner, Clifford B., Philadelphia, Pa.

Southern States Develop't Co., New York, N. Y.

Banks.

First National Bank, Baltimore, Md.

First Nat'l Bank of Key West, Key West, Fla.

Merchants National Bank, Baltimore, Md.

New First National Bank, Columbus, O.

National Exchange Bank, Baltimore, Md.

Savannah Bank & Trust Co., Savannah, Ga.

Bank and Office Railings and Grilles. (Iron.)

Bolles Iron & Wire Works, J. E., Detroit, Mich.

Chesapeake Iron & Wire Wks., Chat'n'ga, Tenn.

Cincinnati Mfg. Co., Cincinnati, O.

Clark Wires and Iron Works, Louisville, Ky.

Dufur & Co., Baltimore, Md.

Meyers Mfg. Co., F. J., Hamilton, O.

Ohio Elevator & Machine Co., The, Columbus, O.

Bank Fixtures.

Buse & Thompson, Baltimore, Md.

Bar Benders. (For Bending Reinforcing Bars.)

Glimmer & Co., D. A., Sandwich, Ill.

Bar Iron. (Refined and Galvanized.)

Carnegie Steel Co., Pittsburgh, Pa.

Nicetown Plate Washer Co., Philadelphia, Pa.

Bars, Wire, Wire Fabric, etc. (Steel for Concrete-Steel Construction.)

American Steel & Wire Co., Chicago, Ill.

Cincinnati Iron & Steel Co., Cincinnati, O.

Concrete-Steel Co., The, New York, N. Y.

Concrete-Steel Engineering Co., New York, N. Y.

Franklin Steel Co., Franklin, Pa.

Hoffmann & Co., R. C., Baltimore, Md.

Jones & Laughlin Steel Co., Pittsburgh, Pa.

Bearings. (Ball.)

Bretz Co., J. S., New York, N. Y.

Standard Roller Bearing Co., Philadelphia, Pa.

Bearings. (Brass Journal.)

Gilbert & Sons Brass Fdry. Co., A., St. Louis, Mo.

Bearings. (Locomotive and Car.)

Keystone Bronze Co., Pittsburgh, Pa.

Bearings. (Oilless.)

North Amer. Metaline Co., Long Island City, N. Y.

Bearings. (Roller.)

Standard Roller Bearing Co., Philadelphia, Pa.

Bells. (Call.)

Holtzer-Cabot Electric Co., Boston, Mass.

Bells and Gongs.

National Tube Co., Pittsburgh, Pa.

Western Electric Co., New York, N. Y.

Belting. (Leather, Canvas, Rubber.)

American Supply Co., Providence, R. I.

Bailey-Lebby Co., Charleston, S. C.

Baltimore Belting Co., Baltimore, Md.

Cameron & Barkley Co., Charleston, S. C.

Chesapeake Belting Co., Baltimore, Md.

Diamond Rubber Co., Akron, O.

Druid Oak Belting Co., Inc., Baltimore, Md.

Gandy Belting Co., Baltimore, Md.

Ladew, Estate Edward R., Glen Cove, N. Y.

N. J. Car Spring & Rubber Co., Jersey City, N. J.

Norwick Belting Co., Norwick, Conn.

Ward-Becke Co., Washington, D. C.

Williams & Sons, I. B., Dover, N. H.

Belting. (Chain.)

Bartlett & Snow Co., C. O., Cleveland, O.

Caldwell & Sons Co., H. W., Chicago, Ill.

Jeffrey Mfg. Co., Columbus, O.

Link-Belt Co., Nicetown (Philadelphia), Pa.

Morse Chain Co., Ithaca, N. Y.

Belt Conveyors.

Jeffrey Mfg. Co., Columbus, O.

Robins Conveying Belt Co., New York, N. Y.

Belt Dressing.

Diamond Rubber Co., Akron, O.

Gandy Belting Co., Baltimore, Md.

Ladew, Estate Edward R., Glen Cove, N. Y.

Belt Fasteners.

Crescent Belt Fastener Co., New York, N. Y.

Belt Lacing and Supplies. [See Belting, Leather, Canvas, Rubber.]

Bicarbonate Soda. (Sap Stain Lumber Dip.)

Church & Dwight Co., New York, N. Y.

Billets. (Open Hearth.)

Erie Forge Co., Erie, Pa.

Blackboards. (Slate.)

East Bangor Con. Slate Co., The, East Bangor, Pa.

Hower, J. K., Slatington, Pa.

Johnson, E. J., New York, N. Y.

Block Tackle. (For Wire or Manila Rope.)

Patterson Co., W. W., Pittsburgh, Pa.

Blowers and Exhaust Fans.

American Blower Co., Detroit, Mich.

Buffalo Forge Co., Buffalo, N. Y.

Clark Co., Geo. P., Windsor Locks, Conn.

De Laval Steam Turbine Co., Trenton, N. J.

General Electric Co., Schenectady, N. Y.

Green Fuel Economizer Co., Mattawan, N. Y.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Standard Blower & Metal Mfg. Co., Atlanta, Ga.

Stephens Co., B. F., Hyde Park, Mass.

Blueprint Apparatus.

Keuffel & Esser, Hoboken, N. J.

Bolters.

Abendroth & Root Mfg. Co., Newburgh, N. Y.

Babcock & Wilcox Co., New York, N. Y.

Brownell & Co., Dayton, O.

Cameron & Barkley Co., Charleston, S. C.

Chattanooga Boiler & Tank Co., Chattanooga, Tenn.

Chicago House Wrecking Co., Chicago, Ill.

Chicago Pipe Co., Chicago, Ill.

Chicago Pipe & Foundry Co., Chicago, Ill.

Memphis Bridge Co., Memphis, Tenn.

Houston Bridge Co., Houston, Tex.

Memphis Pipe Co., Memphis, Tenn.

Memphis Pipe & Foundry Co., Memphis, Tenn.

Memphis Pipe Co., Memphis, Tenn.

Memphis Pipe & Foundry Co., Memphis, Tenn.

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Cities and Towns. (Commercial and Industrial Opportunities.) [See Industrial, Agricultural and Commercial Opportunities.]

Clayworking Machinery. [See Brick and Clayworking Mch. and Supplies.]

Cleansing Compound. (Floors, etc.) India Alkali Works, Boston, Mass.

Clocks. (Time Recorders.) Kaiser, Louis E., Baltimore, Md.

Clocks. (Watchman.) Holtz-Cabot Electric Co., Boston, Mass. Kaiser, Louis E., Baltimore, Md.

Clutches. Dodge Manufacturing Co., Mishawaka, Ind. Positive Clutch & Pulley Works, Buffalo, N. Y.

Coal. Alabama Co., Coal & Iron Co., Birmingham, Ala. Cincinfield Coal Corp., Dante, Va. Cincinfield Fuel Co., Spartanburg, S. C. Consolidated Coal Co., Inc., New York, N. Y. Flat Top Fuel Co., Bluefield, W. Va. Pittsburgh-Buffalo Co., Pittsburgh, Pa. Tennessee Coal, Iron & R. R. Co., B'ng'h'm, Ala.

Coal Cutters. Ingersoll-Rand Co., New York, N. Y. Jeffrey Mfg. Co., Columbus, O.

Coal Handling Machinery. Bartlett & Snow Co., C. O., Cleveland, O. Brown Holsting Mch. Co., Cleveland, O. Hayward Co., New York, N. Y. Hunt Co., C. W., West New Brighton, N. Y. Jeffrey Mfg. Co., Columbus, O. Link-Belt Co., Nicetown (Philadelphia), Pa. Head-Morrison Mfg. Co., Cambridge, Mass. Hobart Conveying Belt Co., New York, N. Y. Williams Co., The G. H., Cleveland, O.

Coal Tar and By-Products. Barrett Mfg. Co., Philadelphia, Pa.

Coke. Alabama Co., Coal & Iron Co., Birmingham, Ala. Flat Top Fuel Co., Bluefield, W. Va. Pittsburgh-Buffalo Co., Pittsburgh, Pa. Rogers, Brown & Co., Cincinnati, O. Tennessee Coal, Iron & R. R. Co., B'ng'h'm, Ala.

Concrete Construction. (Steel Reinforcement.) American Steel & Wire Co., Chicago, Ill. Brown Holsting Machinery Co., Cleveland, O. Concrete-Steel Co., The, New York, N. Y. Ferro Concrete Construction Co., Cincinnati, O. Foster-Crighton-Gould Co., Nashville, Tenn. Jeffrey Mfg. Co., Columbus, O. Relchert Mfg. Co., Milwaukee, Wis. Specialty Eng. Co., Houston, Tex. Unit Construction Co., St. Louis, Mo.

Concrete Curb Protection. (Steel.) Steel Protected Concrete Co., Philadelphia, Pa.

Concrete Dams. Ambrose Hydraulic Const. Co., Boston, Mass. Hydraulic Properties Co., New York, N. Y.

Concrete Floor Dressing. (Waterproof.) Glidden Varnish Co., Cleveland, O.

Concrete Forms. (Metal.) Relchert Mfg. Co., Milwaukee, Wis.

Concrete Mixers. Jeffrey Mfg. Co., Columbus, O. Marab-Capron Mfg. Co., Chicago, Ill. Smith Co., T. L., Atlanta, Ga. Standard Scale & Supply Co., Pittsburgh, Pa. Waterloo Cement Mch. Co., Waterloo, Ia.

Concrete Pile. (Corrugated.) The Underground Const. Co., St. Louis, Mo.

Concrete Reinforcing Bars. Carnegie Steel Co., Pittsburgh, Pa. Concrete-Steel Co., The, New York, N. Y. Concrete Steel Engineering Co., New York, N. Y. Franklin Steel Co., Franklin, Pa.

Concrete Ties. Universal Concrete Tie Co., New Orleans, La.

Condensers. Alberger Condenser Co., New York, N. Y. Dean Bros. Steam Pump Wks., Indianapolis, Ind. Westinghouse Machine Co., Pittsburgh, Pa. York Mfg. Co., York, Pa.

Conductor Pipe. Edwards Mfg. Co., Cincinnati, O. Hussey & Co., C. G., Pittsburgh, Pa. Milwaukee Corrugating Co., Milwaukee, Wis.

Contractors. (Hydro-Electric Developments.) Multiple Arch Hyd. Cons. Co., Spartanburg, S. C.

Contractors' Machinery and Supplies. [See also Holsting Machinery.]

American Engineering Co., Philadelphia, Pa. American Hoist & Derrick Co., St. Paul, Minn. American Locomotive Co., New York, N. Y. Austin Mfg. Co., Chicago, Ill. Case Threshing Mch. Co., Inc., J. I., Racine, Wis. Esterer Machine Works, Pittston, Pa. Flory Mfg. Co., S., Bangor, Pa. Ingersoll-Rand Co., New York, N. Y. J. H. Sales Co., Cincinnati, O. Marke Metal & Supply Co., New York, N. Y. Maryland Equipt'n & Supply Co., Baltimore, Md. Head-Morrison Mfg. Co., Cambridge, Mass. Marquah Mch. Co., Chicago, Ill. Peter Mfg. Co., Wm. J., Knoxville, Tenn. Peter Mfg. Co., Inc., H. W., Philadelphia, Pa. Pipe & Contractors Supply Co., New York, N. Y. Hobart Conveying Belt Co., New York, N. Y. Smith Co., T. L., Atlanta, Ga. Werner Iron Works, G. L., Long Island City, New York, N. Y.

Conveying Machinery. Bartlett & Snow Co., C. O., Cleveland, O. Brown Holsting Mch. Co., Cleveland, O. Caldwell & Son Co., H. W., Chicago, Ill. Dodge Manufacturing Co., Mishawaka, Ind. Jeffrey Mfg. Co., S., Bangor, Pa. Hayward Co., New York, N. Y. J. H. Sales Co., W. West New Brighton, N. Y. Jeffrey Mfg. Co., Columbus, O. Link-Belt Co., Nicetown (Philadelphia), Pa. Head-Morrison Mfg. Co., Cambridge, Mass. Marquah-Stone Mch. Co., Hollidaysburg, Pa. Hobart Conveying Belt Co., New York, N. Y.

Cooling Towers. Alberger Condenser Co., New York, N. Y. Remmell-Dawley Mfg. Co., St. Louis, Mo.

Cordage.

American Mfg. Co., New York, N. Y. Broderick & Bascom Rope Co., St. Louis, Mo. Columbian Rope Co., Auburn, N. Y. North Plymouth Cordage Co., North Plymouth, Mass. Turner Co., J. Spencer, New York, N. Y. Whitlock Cordage Co., New York, N. Y.

Cordage Machinery.

Haskell-Dawley Machinery Co., Boston, Mass.

Corn-Mill Machinery.

Nordyke & Marmon Co., Indianapolis, Ind. Raymond Bros., Impact Pulv. Co., Chicago, Ill. Starr Co., B. F., Baltimore, Md.

Cotton Duck.

Turner Co., J. Spencer, New York, N. Y.

Cotton Oil and Products.

American Cotton Oil Co., New York, N. Y.

Cotton Yarns.

(Commission Merchants.) Palmer, Linkroum & Co., New York, N. Y.

Cotton-Gin Machinery.

Carver Cotton Gin Co., East Bridgewater, Mass. Continental Gin Co., Birmingham, Ala. Gibbs Machinery Co., Columbia, S. C.

Cotton-Mill Machinery.

American Mach. & Mfg. Co., Charlotte, N. C. American Supply Co., Providence, R. I.

Draper Co., Hopedale, Mass.

Kitson Machine Shop, Lowell, Mass.

Lowell Machine Shop, Lowell, Mass.

Mason Machine Works, Tauton, Mass.

Saco-Pettee Co., Newton Upper Falls, Mass.

Whitlin Machine Works, Whitinsville, Mass.

Whitinsville Spinn'g Ring Co., Whitinsville, Mass.

Cotton-Mill Supplies.

American Supply Co., Providence, R. I.

Whitinsville Spinn'g Ring Co., Whitinsville, Mass.

Cottonseed-Oil Machinery.

Buckeye Iron & Brass Works, Dayton, O.

Burnett Bros. & F., New York, N. Y.

Callahan Co., W. P., Louisville, Ky.

Cardwell Machine Co., Richmond, Va.

Carver Cotton Gin Co., East Bridgewater, Mass.

Continental Gin Co., Birmingham, Ala.

Raymond Bros., Impact Pulv. Co., Chicago, Ill.

Couplings.

American Spiral Pipe Works, Chicago, Ill.

Brown Bros. & F., New York, N. Y.

Caldwell Co., Inc., W. P., Louisville, Ky.

Dodge Manufacturing Co., Mishawaka, Ind.

Golden's Foundry & Machine Co., Columbus, Ga.

Sinclair Scott Co., Baltimore, Md.

Wood's Sons, T. B., Chambersburg, Pa.

Couplings. (Car.)

Welmer Chain & Iron Co., Lebanon, Pa.

Couplings. (Hose, Air, Gas, Steam and Water.)

National Tube Co., Pittsburgh, Pa.

Coverings. (Pipe, Boiler, etc.)

Carolina Portland Cement Co., Charleston, S. C.

Johns-Manville Co., H. W., New York, N. Y.

Southern Pipe Covering Co., Inc., Richmond, Va.

Cowls.

Pullman Auto. Ventilator Mfg. Co., York, Pa.

Cranes. (Locomotive.)

American Hoist & Derrick Co., St. Paul, Minn.

Brown Holsting Machinery Co., Cleveland, O.

Exeter Machine Works, Pittston, Pa.

Ohio Locomotive Crane Co., Bucyrus, O.

Cranes. (Travelling, Hand, Power, Hydraulic.)

Brown Holsting Machinery Co., Cleveland, O.

Hayward Co., New York, N. Y.

Lane Mfg. Co., Montpelier, Vt.

Northern Engineering Works, Detroit, Mich.

Spediel, J. G., Reading, Pa.

Crayons.

Lowell Crayon Co., Lowell, Mass.

Crematories. (Garbage.)

Specialty Eng. Co., Houston, Tex.

Cresosoted Wood Block.

(Contractors for Laying.)

Cresosoted Wood Block Pav. Co., New Orleans, La.

Cresosoting Works.

Gulfport Cresosoting Co., Gulfport, Miss.

Intern'l Creso'tg' Co., Inc., Galveston, Tex.

National Lumber & Cres. Co., Texarkana, Ark.

Southern Cresositing Co., Ltd., Shreveport, La.

Southern Wood Preserving Co., Atlanta, Ga.

Crossbars and Pins.

Caroline Electrical Co., Raleigh, N. C.

Intern'l Creso'tg' Co., Inc., Galveston, Tex.

Southern Cresositing Co., Ltd., Shreveport, La.

Crossies.

Universal Concrete Tie Co., New Orleans, La.

Cross-tie Machine.

Standard Cross-tie Mch. Co., New Orleans, La.

Cross-ties.

Intern'l Creso'tg' Co., Inc., Galveston, Tex.

National Lumber & Cres. Co., Texarkana, Ark.

Southern Cresositing Co., Ltd., Shreveport, La.

Universal Concrete Tie Co., New Orleans, La.

Cross-ties. (Reinforced Concrete.)

Universal Concrete Tie Co., New Orleans, La.

Cross-ties. (Steel.)

Carnegie Steel Co., Pittsburgh, Pa.

Crushers. (Corn and Cob.)

Jeffrey Mfg. Co., Columbus, O.

Raymond Bros., Impact Pulv. Co., Chicago, Ill.

Williams Pat. Crusher & Pulv. Co., Chicago, Ill.

Cross-ties. (Wood.)

Case Threshing Mch. Co., Inc., J. I., Racine, Wis.

Esterer Machine Works, Pittston, Pa.

Flory Mfg. Co., S., Bangor, Pa.

Hay Bros. & Co., Pittsburgh, Pa.

Ingersoll-Rand Co., New York, N. Y.

J. H. Sales Co., Cincinnati, O.

Marke Metal & Supply Co., New York, N. Y.

Marshall Equipt'n & Supply Co., Baltimore, Md.

Marshall Equipt'n & Supply Co., Baltimore, Md

CLASSIFIED INDEX OF ARTICLES ADVERTISED

Engineers—
GAS.
Lea, Henry L., Chicago, Ill.

GEOLoGICAL.
Bureau of Assoc. Geological Engineers, Boston, Mass.

DAVis, Geo. C., Philadelphia, Pa.

FoHs, F. Julius, Lexington, Ky.

Froehling & Robertson, Richmond, Va.

HyDRAULIC, SANITARY AND SEWERAGE.
Brindley Co., New York, N. Y.

Brown, S. D., Chattanooga, Tenn.

Harlow, Co., James H., Baltimore, Md.

Hatton, T. Chalkley, Wilmington, Del.

Leete-Maupin, Engineering Co., Huntington, W. Va.

Manning-Hughes, Co., Camden, S. C.

McCrory Co., The J. B., Atlanta, Ga.

Multiple Arch Hydraulic Const. Co., Ltd., Spar-

Myers, W. W., Greensboro, N. C.

Pew, Arthur, Atlanta, Ga.

Specialty Eng. Co., Houston, Tex.

Tucker & Laxton, Charlotte, N. C.

ICE AND REFRIGERATING.
Hague, John, St. Louis, Mo.

Taft-Nordmeyer Eng. Co., St. Louis, Mo.

ILLUMINATING.
Holophane Co., Newark, O.

LANDSCAPE.
Drane, Brent S., Charlotte, N. C.

Reding & Howard, Baltimore, Md.

REINFORCED CONCRETE CONSTRUCTION, BUILDINGS, BRIDGES, ETC.
Concrete Steel Engineering Co., New York, N. Y.

Gardner & Howe, Memphis, Tenn.

WATER-WORKS.
Myers, E. W., Greensboro, N. C.

Engines.

Gas and GASOLINE.
Blinsdell Machinery Co., Bradford, Pa.

Bogart Gas Power Eng. Co., Buffalo, N. Y.

Fairbanks, Morse & Co., Chicago, Ill.

Heer Engine Co., Portsmouth, O.

Mietz, A., New York, N. Y.

Novo Engine Co., Lansing, Mich.

Otto Gas Engine Works, Philadelphia, Pa.

Power Mfg. Co., Lima, Ohio.

Quincy Engine Co., Quincy, Pa.

Standard Gas Power Co., Atlanta, Ga.

Westinghouse Machine Co., The Pittsburgh, Pa.

Van Duzen, Royce & Co., Columbus, O.

OIL.
Covington Mch. Co., New York, N. Y.

Mietz, A., New York, N. Y.

Power Mfg. Co., Lima, O.

Engines. (Steam.)
Allis-Chalmers Co., Milwaukee, Wis.

Ametrolift, Co., Detroit, Mich.

American Engine Co., Bush Brook, N. J.

American Hoist & Derrick Co., St. Paul, Minn.

Atlas Engine Works, Indianapolis, Ind.

Ball Engine Co., Erie, Pa.

Baltimore Machine Works, Baltimore, Md.

Brownell Co., The Dayton, O.

Buffalo Forge Co., Buffalo, N. Y.

Cameron & Barkley Co., Charleston, S. C.

Chicago House Wrecking Co., Chicago, Ill.

Cooper Co., C. & M., Vernon, O.

Engberg's Elect. & Mech. Wks., St. Joseph, Mich.

Gibbs Machinery Co., Columbia, S. C.

Griffith & Wedge Co., The Zanesville, O.

Harrisburg Fdy. & Mach. Wks., Harrisburg, Pa.

Hoffman, Bowen, Rentschler Co., Hamilton, O.

Horn, S. S., Springfield, O., Cincinnati, O.

Leffel & Co., James, Springfield, O.

Lombard Iron Works, Augusta, Ga.

Mecklenburg Iron Works, Charlotte, N. C.

Morris Machine Works, Baldwinville, N. Y.

Murray Iron Works Co., Burlington, Ia.

Nagle Corliss Engine Wks., Erie, Pa.

Oil City Boiler Co., Oil City, Pa.

Phoenix Iron Works Co., Meadville, Pa.

Price Machinery Co., S. M., Norfolk, Va.

Ridgway Dynamite & Engine Co., Ridgway, Pa.

Schofield's Sons Co., J. S., Macon, Ga.

Smith Courtney Co., Richmond, Va.

Southern Engine & Boiler Works, Jackson, Tenn.

Sturtevant Co., B. F., Hyde Park, Mass.

Tilton Mfg. Co., Milwaukee, Wis.

Westinghouse Machine Co., Pittsburgh, Pa.

Envelopes. (Stationery.)
Young & Selden Co., Baltimore, Md.

Excavating Machinery. (Steam Shovels, etc.)
American Locomotive Co., New York, N. Y.

Baldwin Equipment & Supply Co., Chicago, Ill.

Bucyrus Co., So. Milwaukee, Wis.

Furbanks Steam Shovel Co., Marion, O.

Hawkeye Co., New York, N. Y.

Lidgerwood Mfg. Co., Columbus, O.

Jeffrey Mfg. Co., New York, N. Y.

Marlon-Osgood Co., Marion, O.

Marlon Steam Shovel Co., Marion, O.

Montgomery Machine Co., Chicago, Ill.

Norborn Engineering Co., Philadelphia, Pa.

Williams Co., The G. H., Cleveland, O.

Excusion Machinery.
Kline, Lewis T., Alpena, Mich.

Exhaust Heads.
Abendroth & Root Mfg. Co., Newburgh, N. Y.

American Spiral Pipe Works, Chicago, Ill.

Hoppen Mfg. Co., Springfield, O.

Exhibits. (Machinery Builders' Equipment and Supplies.)
Builders' Exchange, Baltimore, Md.

Expansion Joints.
Alberger Condenser Co., New York, N. Y.

Budger & Sons Co., E. B., Boston, Mass.

Explosives.
du Pont-de Nemours Powder Co., E. I., Wilmington, Del.

Factory Sites. (Town and Railroad.) [See Industrial, Agricultural and Commercial Opportunities.]

Fans. (Electrical.)
Bates & Bros. Co., D. L., Dayton, O.

General Electric Co., Schenectady, N. Y.

Robbins & Myers Co., Springfield, O.

Western Electric Co., New York, N. Y.

Westinghouse Elec. & Mfg. Co., Pittsburgh, Pa.

Fans. (Ventilating.) [See Blowers, Exhaust Fans.]

Fans. (Water and Belt Driven.)
Bates & Bros. Co., D. L., Dayton, O.

Fastener Driving Machine. (Corrugated Joint.)
Saranac Machine Co., St. Joseph, Mich.

Feed-Water Heaters and Purifiers.
Alberger Condenser Co., New York, N. Y.

American Water Softener Co., Philadelphia, Pa.

Blake & Knowles Steam Pump Works, New York, N. Y.

Brownell Co., Dayton, O.

Exeter Machine Works, Pittston, Pa.

Gibbs Machinery Co., Columbia, S. C.

Hoppe Mfg. Co., Springfield, O.

McAdoo, Thomas, Philadelphia, Pa.

Murray Iron Works Co., Burlington, Ia.

National Pipe Bending Co., New Haven, Conn.

Scaife & Sons Co., Wm. B., Pittsburgh, Pa.

Stewart Heater Co., Buffalo, N. Y.

Wilmington Iron Works, Wilmington, N. C.

Feed-Water Heater and Purifier and Oil Separator Combined.
Blake & Knowles Steam Pump Works, New York, N. Y.

Stewart Heater Co., Buffalo, N. Y.

Felt. (Building, Sheathing.)
Barrett Mfg. Co., Philadelphia, Pa.

Fencing, Entrance Gates. (Iron Steel, Wire.)
American Steel & Wire Co., Chicago, Ill.

Bolles Iron & Wire Works, J. E., Detroit, Mich.

Dow Wire and Iron Works, Louisville, Ky.

Dufur & Co., Baltimore, Md.

New Jersey Wire Cloth Co., Trenton, N. J.

Ohio Elevator & Mach. Co., The, Columbus, O.

Fertilizer Machy. [See also Phosphate Mch.]
Pratt Eng. & Mch. Co., Atlanta, Ga.

Smith Co., T. L., Atlanta, Ga.

Vale & Murdoch Iron Works, Charleston, S. C.

Walker & Elliott, Wilmington, Del.

Wilmington Iron Works, Wilmington, N. C.

Films.
Barnett Co., G. & H., Philadelphia, Pa.

Delta File Works, Philadelphia, Pa.

Nicholson File Co., Providence, R. I.

Filters. (Water, for Domestic and Industrial Purposes.)
American Water Softener Co., Philadelphia, Pa.

International Filter Co., Chicago, Ill.

Lynn-Supper Co., The, Cincinnati, O.

New York City Jewell Fil. Co., New York, N. Y.

Robert Filter Mfg. Co., Philadelphia, Pa.

Seale & Sons Co., Wm. B., Pittsburgh, Pa.

Tucker & Laxton, Charlotte, N. C.

Financial Publication.
Financial Review, New York, N. Y.

Fire Alarm Boxes.
Baltic, Mch. Products Co. (Relay Station P. O.), Baltimore, Md.

Fire Clay.
West Virginia Fire Clay Mfg. Co., Pittsburgh, Pa.

Fire Clay Brick. [See Brick, Fire Clay.]

Fire Box Blocks.
Ashland Fire Brick Co., Ashland, Ky.

Fire Door Fixtures.
Victor Mfg. Co., Newburyport, Mass.

Fire Extinguishers.
Badger & Sons Co., E. B., Boston, Mass.

General Fire Extinguisher Co., Providence, R. I.

Kaiser, Louis E., Baltimore, Md.

Fire Extinguishing Apparatus.
General Fire Extinguisher Co., Providence, R. I.

Fire Escapes.
Bolles Iron & Wire Works, J. E., Detroit, Mich.

Chesapeake Iron Works, Baltimore, Md.

Fireplaces. (Artistic Brick.)
Fiske & Co., Inc., New York, N. Y.

Fireproof Building Construction. (Steel.)
[See Concrete Construction.]

Fireproof Building Material.
Dulstrom Metallic Door Co., Jamestown, N. Y.

Johns-Manville Co., H. W., New York, N. Y.

Fireproof Doors and Shutters.
Dulstrom Metallic Door Co., Jamestown, N. Y.

Kinnear Mfg. Co., Columbus, O.

New Orleans Roof & Metal Co., New Orleans, La.

Richmond Safety Gate Co., Richmond, Ind.

Victor Mfg. Co., Newburyport, Mass.

Fireproof Windows. [See Window Frames and Sashes (Fireproof).]

Flanges. (Iron and Steel.)
American Cast Iron Pipe Co., Birmingham, Ala.

American Pipe & Steel Co., Philadelphia, Pa.

American Spiral Pipe Works, Chicago, Ill.

Dart Manufacturing Co., E. M., Providence, R. I.

Glamorgan Pipe & Foundry Co., Lynchburg, Va.

McWane Pipe Works, Lynchburg, Va.

National Tube Co., Pittsburgh, Pa.

U. S. Cast Iron Pipe & Fdy. Co., New York, N. Y.

Whitlock Coll Pipe Co., Hartford, Conn.

Wood & Co., R. D., Philadelphia, Pa.

Flexible Joints.
Moran Flex. Steam Joint Co., Inc., Louisville, Ky.

Flooring. (Cement.)
Dagostin & Angelini Bros., Montgomery, Ala.

Flooring. (Hardwood, Maple, Oak.)
Northeast Mantel Co., W. J., Memphis, Tenn.

Nashville Hardw'd Flooring Co., Nashville, Tenn.

Flour and Grist Mill Machinery and Supplies.
Caldwell & Sons Co., H. W., Chicago, Ill.

Gibbs Machinery Co., Columbia, S. C.

Nordyke & Marmon Co., Indianapolis, Ind.

Salem Foundry & Machine Works, Salem, Va.

Star Co., B. F., Baltimore, Md.

Ventz & Co., L. R., Louisville, Ky.

Wolf Co., Chambersburg, Pa.

Flushtank Regulator.
Modern Iron Works, Quincy, Ill.

Foot Valves.
Cameron Steam Pump Wks., A. S., New York, N. Y.

Forges.
Buffalo Forge Co., Buffalo, N. Y.

Sturtevant Co., B. F., Hyde Park, Mass.

Forgings.
Richmond Forgings Corporation, Richmond, Va.

Welmer Chain & Iron Co., Lebanon, Pa.

Forgings. (Hammered.)
Eric Forge Co., Erie, Pa.

Foundations. (Waterproof.)
Underground Constr. Co., The, St. Louis, Mo.

Foundry Equipment and Supplies.
Paxson Co., J. W., Philadelphia, Pa.

Frogs. [See Railroad Frogs and Switches.]

Fuel Economizer.
Green Fuel Economizer Co., Matteawan, N. Y.

Sturtevant Co., B. F., Hyde Park, Mass.

Fuel Oil.
Gulf Refining Co., Pittsburgh, Pa.

Texas Co., The, New York, N. Y.

Fuel Oil Equipment.
Petroleum Iron Works Co., Sharon, Pa.

Fuses, Bases and Fittings.
Johns-Manville Co., H. W., New York, N. Y.

Galvanized Steel and Iron.
American Sheet & Tin Plate Co., Pittsburgh, Pa.

La Belle Iron Works, Steubenville, O.

McCalla, Harold, Philadelphia, Pa.

New Orleans Roof & Metal Co., New Orleans, La.

Wood Iron & Steel Co., Alan, Philadelphia, Pa.

Youngstown Sheet & Tube Co., Youngstown, O.

Galvanizing Machinery.
Wilford Iron Works Co., Millard F., Philadelphia, Pa.

Garages. (Fireproof and Portable.)
Harry Steel Co., O. K., St. Louis, Mo.

Gas Blowers. (Turbine.)
Terry Steam Turbine Co., New York, N. Y.

Gas Compressors.
Blasdell Machinery Co., Bradford, Pa.

Ingersoll-Rand Co., New York, N. Y.

Gas Engines. [See Engines, Gas.]

Gas Holders.
Chicago Bridge & Iron Wks., Chicago, Ill.

Gas Plants.
Western Gas Construction Co., Ft. Wayne, Ind.

Gas Producers.
Bogart Gas Power Eng. Co., Buffalo, N. Y.

Otto Gas Engine Works, Philadelphia, Pa.

Standard Gas Power Co., Atlanta, Ga.

Westinghouse Machine Co., Pittsburgh, Pa.

Wood & Co., R. D., Philadelphia, Pa.

Gasoline and Kerosene.
Gulf Refining Co., Pittsburgh, Pa.

Texas Co., The, New York, N. Y.

Gas and Steam Fitters' Tools.
Saunders' Sons, D., Yonkers, N. Y.

Gaskets. (Rubber.)
N. J. Car Spring & Rubber Co., Jersey City, N. J.

Gears.
Albro-Clem Elevator Co., Philadelphia, Pa.

Brown Co., A. & F., New York, N. Y.

Caldwell & Sons Co., Inc., W. E., Louisville, Ky.

Caldwell & Sons Co., H. W., Chicago, Ill.

Crescent Gear Co., V. H., Philadelphia, Pa.

Dodge Glove Iron Works Co., Dayton, O.

Dodge Manufacturing Co., Mishawaka, Ind.

Earle Gear & Machine Co., The, Philadelphia, Pa.

Jeffrey Mfg. Co., Columbus, O.

Poole Engineering & Machine Co., Baltimore, Md.

Positive Clutch & Pulley Works, Buffalo, N. Y.

Trump Mfg. Co., Springfield, O.

Geologists.
Bureau of Assoc. Geological Engineers, Boston, Mass.

Froehling & Robertson, Richmond, Va.

Glass. (Plate, etc.)
Binzanger & Co., Memphis, Tenn.

Holophane Co., Newark, O.

Governors.
Pickerling Governor Co., Portland, Conn.

Grain Elevator Supplies.
Caldwell & Sons Co., H. W., Chicago, Ill.

Dodge Manufacturing Co., Mishawaka, Ind.

Jeffrey Mfg. Co., Columbus, O.

Link-Belt Co., Nicetown (Philadelphia), Pa.

Graphite.
Dixon Crucible Co., Joseph, Jersey City, N. J.

Grates and Grate Bars.
Mellor Furnace Engineering Co., Philadelphia, Pa.

Lamotte Co., Birmingham, Ala.

Gravel.
Arundel Sand & Gravel Co., Baltimore, Md.

Latrobe & Co., C. F., Richmond, Va.

Grease.
Albany Lubricating Co., New York, N. Y.

Grease Cups.
Albany Lubricating Co., New York, N. Y.

Greases and Lubricating Compounds.
Albany Lubricating Co., New York, N. Y.

Galena Signal Oil Co., Franklin, Pa.

Robinson & Son Co., Wm. C., Baltimore, Md.

Texas Co., The, New York, N. Y.

Grinders. (Gypsum, Limestone, etc.)
Williams Pat. Crusher & Pulv. Co., Chicago, Ill.

Grinding Wheels.
Abrasice Material Co., Philadelphia, Pa.

Carborundum Co., Niagara Falls, N. Y.

Norton Co., Worcester, Mass.

Vitrified Wheel Co., Westfield, Mass.

Groovers.
Huther Bros. Saw Mfg. Co., Rochester, N. Y.

Gunpowder.
du Pont-de Nemours Powder Co., E. I., Wilmington, Del.

Hammers. (Steam, Power, Pneumatic.)
Chicago Pneumatic Tool Co., Chicago, Ill.

Independent Pneumatic Tool Co., Chicago, Ill.

Ingersoll-Rand Co., New York, N. Y.

Hand Elevators.
McKenna Bros. Brass Co., Pittsburgh, Pa.

Sidney Elevator Mfg. Co., Sidney, O.

Handle Machinery. [See Woodworking Mch.]

Hangers. (See Pulleys, Shafting and Hangers.)

Hardwood Doors and Trim.
Mansell & Felton Lumber Co., Macon, Ga.

Hauling Engines. (Steam Traction.)
Case Threshing Mch. Co., Inc., J. I., Racine, Wis.

Hay Tools.
Myers & Bro., F. E., Ashland, O.

Heater. (Portable, for Bituminous Pavements.)
Huggles-Coles Engineering Co., New York, N. Y.

Hydrogen.
International Oxygen Co., New York, N. Y.

Ice-making Machinery and Supplies.
Baltimore Machine Works, Baltimore, Md.

Columbus Iron Works, Columbus, Ga.

Creamery Packing Mfg. Co., De Kalb, Ill.

Frick Co., The, Waynesboro, Pa.

Remington Machine Co., Wilmington, Del.

Reunmell-Dawley Mfg. Co., St. Louis, Mo.

Taft-Nordmeyer Eng. Co., St. Louis, Mo.

Ulter Mfg. Co., Milwaukee, Wis.

Vogt Machine Co., Henry, Louisville, Ky.

York Mfg. Co., York, Pa.

Incorporators. (Companies.)
Delaware Trust Co., Wilmington, Del.

Sieber & Co., H. F., Philadelphia, Pa.

Industrial, Agricultural and Commercial Opportunities.

CITIES AND TOWNS.
Atlanta, Ga., Ga. Bureau of Indus' & Immigr.

Baltimore, Md., Gas & Electric Co.

Bedford City, Va., Board of Trade.

Newport News, Va., Old Dominion Land Co.

Texia City, Tex., Texas City Transportation Co.

Winchester, Va., Business Men's League.

RAILROADS.
Atlanta, Birn' b'm & Atlantic R. R., Atlanta, Ga.

Atlanta & W. Point R. R. Co., Montgomery, Ala.

Baltimore & Ohio Railroad, Baltimore, Md.

Carolina, Columbia & O., Johnson City, Tenn.

Central of Georgia Ry. Co., Savannah, Ga.

Florida East Coast Rwy., St. Augustine, Fla.

Illinois Central Railroad Co., Chicago, Ill.

Norfolk & Western Railway, Roanoke, Va.

Richmond, Fredericksburg & Potomac Railroad, Ashland, Va.

Seaboard Air Line, Portsmouth, Va.

Southern Railway Co., Washington, D. C.

Tennessee Central Railroad Co., Cookeville, Tenn.

Virginia Railway & Power Co., Richmond, Va.

Industrial Track Work. [See Railways, Ind.]

Injectors.
Jenkins Bros., New York, N. Y.

Sellers & Co., Inc., Wm., Philadelphia, Pa.

Insulating Materials.
Johns-Manville Co., H. W., New York, N. Y.

Insurance.
Hartford Steam Boiler Inspection & Ins. Co., Hartford, Conn.

Maryland Casualty Co., Baltimore, Md.

Interior Trim. (Metallic.)
Dabstrom Metallic Door Co., Jamestown, N. Y.

Iron.
Alabama Con. Coal & Iron Co., Birmingham, Ala.

American Rolling Mill Co., Middletown, O.

La Belle Iron Works, Steubenville, O.

Milton Mfg. Co., Milton, Pa.

Oliver Iron & Steel Co., Pittsburgh, Pa.

Republic Iron & Steel Co., Youngstown, O.

Tennessee Coal, Iron & R. R. Co., B'ngm'g, Ala.

Wood Iron & Steel Co., Alan, Philadelphia, Pa.

Irrigation Machinery.
Blakeslee Mfg. Co., Du Quoin, Ill.

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Petroleum Iron Works Co., Sharon, Pa.

Key Seater. (Portable.)
Bar & Son, John T., Brooklyn, N. Y.

Knitting Machinery.
Acme Knitting Machine & Needle Co., Franklin N. H.

Laquera. (All Purposes.)
Perlaque Mfg. Co., St. Louis, Mo.

Lamp Posts. (Electric, Gas.)
Western Gas Construction Co., Ft. Wayne, Ind.

Lamps. (Arc and Incandescent.)
Boston Incandescent Lamp Co., Danvers, Mass.
Columbus Incandescent Lamp Co., St. Louis, Mo.
Fostoria Incandescent Lamp Co., Fostoria, O.
General Electric Co., Schenectady, N. Y.
Kentucky Electric Co., Inc., Owensboro, Ky.
Lee Electric Co., Baltimore, Md.
Piedmont Electric Co., Asheville, N. C.
Western Electric Co., New York, N. Y.
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Bar. J. H. C., Philadelphia, Pa.
Fendt & Co., Albert, Brunswick, Ga.
Kimberly & Co., J. T., Atlanta, Ga.
Subraun & Co., S. L., Norfolk, Va.
Sperry & Co., Marcus E., Tampa, Fla.
Whitney, Frank, Savannah, Ga.

Lath. (Expanded Metal.)
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Leadite.
Leadite Co., Inc., The, Philadelphia, Pa.

Lighting Equipment.
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Limestone Products.
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Liquor Filters.
International Filter Co., Chicago, Ill.

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Young & Selden Co., Baltimore, Md.

Loans.
Assets Realization Co., Chicago, Ill.

Lockers. (Metal.)
Reighley Metal Ceiling Mfg. Co., E., Pittsburgh, Pa.

Locomotives.
INDUSTRIAL.
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Baldwin Locomotive Works, The, Philadelphia, Pa.
Byers Machine Co., John F., Ravenna, O.
Climax Mfg. Co., Corry, Pa.
Davenport Locomotive Works, Davenport, Ia.
Heisler Locomotive Works, Erie, Pa.
Jeffrey Mfg. Co., Columbus, O.
Lima Locomotive & Machine Co., Lima, O.
Miles Co., Cincinnati, O.
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Southern Supply Co., Norfolk, Va.

Looms and Weaving Machinery.
Drapier Co., Hopedale, Mass.
Mason Machine Works, Taunton, Mass.

Lubricants.
Albany Lubricating Co., New York, N. Y.

Lumber.
Industrial Lumber Co., Elizabeth, La.
Miles & Felton Lumber Co., Macon, Ga.

Lumber. (Heavy Construction, Pitch Pine, etc.)
Miles & Felton Lumber Co., Macon, Ga.

National Lumber & Creosot Co., Texarkana, Ark.

Naylor & Co., S. E., Gulfport, Miss.

Lumber. (Yellow Pine.)
Industrial Lumber Co., Elizabeth, La.

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State Oil Co., E. W., Brooklyn, N. Y.

Kline, Lewis T., Alpena, Mich.

Leiter & Co., Charles, Brooklyn, N. Y.

Oil City Boiler Co., Oil City, Pa.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Roxbury Fdry. & Mch. Wks., Roxbury, Pa.

Stratton & Bragg Co., Petersburg, Va.

Universal Telegraphic Co., Baltimore, Md.

Machinery and Supplies. (New and Second-Hand Bargains.)
Boston Iron & Metal Co., Baltimore, Md.

Cleveland House Wrecking Co., Chicago, Ill.

Cleveland Belting & Machinery Co., Cleveland, O.

Eastern Railway Equipment Co., Chicago, Ill.

Enters & Son, New York, N. Y.

Hirsch & Sons Co., Philadelphia, Pa.

Hysle & Co., Pittsburgh, Pa.

Lehman, Charles, Birmingham, Ala.

Lever & Co., Philadelphia, Pa.

Lodge & Shipley Machine Tool Co., Cincinnati, O.

Martin Metal & Supply Co., New York, N. Y.

Mathes Iron & Metal Co., G. St. Louis, Mo.

Plamanneller Engineering Co., Chicago, Ill.

Pickett Co., Inc., H. W., Philadelphia, Pa.

Pratt Engineering & Mach. Co., Atlanta, Ga.

Nuts. [See Bolts, Nuts, Rivets, etc.]

Nut Locks. (Railroad.)
Universal Nut & Bolt Lock Co., Newport, Ky.

Office Furniture.
Ruse & Thompson, Baltimore, Md.

Oils. (Lubricating, etc.)
Albany Lubruting Co., New York, N. Y.

Borne-Scribner Co., New York, N. Y.

Galena Safety Oil Co., Franklin, Pa.

Gulf Refining Co., Pittsburgh, Pa.

Robinson & Son Co., Wm. C., Baltimore, Md.

Texas Co., The, New York, N. Y.

Machine Tools.
Greaves, Klusman & Co., Cincinnati, O.
Manning, Maxwell & Moore, Inc., New York, N. Y.
Steptoe Shaper Co., John, Cincinnati, O.

Machinists. (Engineers.)
American Mch. & Mfg. Co., Charlotte, N. C.
Roanoke Iron Works, Inc., Roanoke, Va.
Stratton & Bragg Co., Petersburg, Va.
Universal Telegraphic Co., Baltimore, Md.

Magnesia Materials.
Johns-Manville Co., H. W., New York, N. Y.

Magnet Electro. (For Cottonseed, Linters and Hullers.)
Dixie Electro Magnet Co., Memphis, Tenn.

Magnetic Separators.
Paxson Co., J. W., Philadelphia, Pa.

Mail Chutes.
Cutler Mall Chute Co., Rochester, N. Y.

Mantels. (Wooden.)
Northcross Mantel Co., W. J., Memphis, Tenn.

Marble Work. (Interior.)
Dagostin & Angelini Bros., Montgomery, Ala.
Southern Masonic Tile Co., Birmingham, Ala.

Masonry Dams.
Multiple Arch Hydraulic Const. Co., Ltd., Spartanburg, S. C.

Mechanical Draft.
American Blower Co., Detroit, Mich.

Metaline.
North Amer. Metaline Co., Long Island City, N. Y.

Metal Culverts. [See Culverts.] (Corrugated Metal.)

Metal Polish.
Hoffman, Geo. W., Indianapolis, Ind.

Metal Shingles.
Burres & Co., John T., Anderson, S. C.
Chattanooga R. & P. Co., Chattanooga, Tenn.
Cincinnati Sheet Metal & R. Co., Cincinnati, O.
Cortright Metal Roofing Co., Philadelphia, Pa.
Edwards Manufacturing Co., Cincinnati, O.
Hyndman Roofing Co., Cincinnati, O.

Metal Stamping.
Persons Specialty & Mch. Co., Philadelphia, Pa.

Metal Window Frames and Sashes.
Detroit Steel Products Co., Detroit, Mich.

Edwards Mfg. Co., The, Cincinnati, O.

Keighley Metal Ceiling Mfg. Co., S., Pittsburgh, Pa.

Volgtmann & Co., Chicago, Ill.

Metal Work. (Stamped and Embossed Hotel Checks, Key Tags, etc.)
American Railway Supply Co., New York, N. Y.

Metal-Working Machinery.
Bertsch & Co., Cambridge City, Ind.

Bissell Co., E. W., Brooklyn, N. Y.

Gibson Machinery Co., Columbia, S. C.

Leiter & Co., Chas., Brooklyn, N. Y.

Price Machinery Co., S. M., Norfolk, Va.

Roxbury Fdry. & Mach. Co., Roxbury, Pa.

Micrometers, Callipers, etc.
Starrett Co., L. S., Athol, Mass.

Milk Filters. (Liquor, Milk, etc.)
International Filter Co., Chicago, Ill.

Mill Engineers and Architects.
Lockwood, Greene & Co., Boston, Mass.

Skrine, J. E., Greenville, S. C.

Mills Supplies.
Appomattox Iron Wks. & Sup. Co., Petersburg, Va.

Bailey-Lebby Co., Charleston, S. C.

Cameron & Barkley Co., Charleston, S. C.

Gainesville Iron Works, Gainesville, Ga.

Lindsey, J. L., Inc., Richmond, Va.

Lombard Iron Works, Augusta, Ga.

Manning, Maxwell & Moore, Inc., New York, N. Y.

Meeklenburg Iron Works, Charlotte, N. C.

Nordyke & Marmon Co., Indianapolis, Ind.

Salem Foundry & Machine Works, Salem, Va.

South Coast Foundry Co., Richmond, Va.

Starr Co., B. F., Baltimore, Md.

Stratton & Bragg Co., Petersburg, Va.

Ward-Becke Co., Washington, D. C.

Wolf Co., Chambersburg, Pa.

Mineral. (Industrial.)
Howard & Co., Savannah, Ga.

Mining Machinery. (Gold, Copper, Plate, etc.)
Bartlett & Snow Co., C. O., Cleveland, O.

Jeffrey Mfg. Co., Columbus, O.

McLanahan-Stone Mach. Co., Hollidaysburg, Pa.

Mecklenburg Iron Works, Charlotte, N. C.

Nordyke & Marmon Co., Indianapolis, Ind.

Power & Mining Machinery Co., Cudahy, Wis.

Raymond Bros. Impact Pulv. Co., Chicago, Ill.

Mixer Machinery.
Smith Co., T. L., Atlanta, Ga.

Mixing Machinery.
Dunning, W. D., Syracuse, N. Y.

Lynn-Superior Co., The, Cincinnati, O.

Mortar Colors.
Chattanooga Paint Co., Chattanooga, Tenn.

Motor Trucks.
International Motor Co., New York, N. Y.

Mouldings, Casings, etc.
Massee & Felton Lumber Co., Macon, Ga.

Nails and Spikes.
American Steel & Wire Co., Chicago, Ill.

Republic Iron & Steel Co., Youngstown, O.

Youngstown Sheet & Tube Co., Youngstown, O.

Nitre Pots, Eggs.
Pratt Engineering & Mach. Co., Atlanta, Ga.

Nuts. [See Bolts, Nuts, Rivets, etc.]

Nut Locks. (Railroad.)
Universal Nut & Bolt Lock Co., Newport, Ky.

Office Furniture.
Ruse & Thompson, Baltimore, Md.

Oils. (Lubricating, etc.)
Albany Lubruting Co., New York, N. Y.

Borne-Scribner Co., New York, N. Y.

Galena Safety Oil Co., Franklin, Pa.

Gulf Refining Co., Pittsburgh, Pa.

Robinson & Son Co., Wm. C., Baltimore, Md.

Texas Co., The, New York, N. Y.

Oil-Burning Appliances.
Petroleum Iron Works Co., Sharon, Pa.

Oil Cans.
Wall Mfg. Supply Co., P., Allegheny, Pa.

Oil Engines. [See Engines (Oil).]

Oil Separators.
Stewart Heater Co., Buffalo, N. Y.

Oil Stones.
Carborundum Co., Niagara Falls, N. Y.

Norton Co., Worcester, Mass.

Oil-Well Machinery.
Keystone Steam Well Mach. Co., Beaver Falls, Pa.

Williams Bros., Ithaca, N. Y.

Ornamental Iron Work.
Belmont Iron Works, Philadelphia, Pa.

Bolton Iron & Wire Works, E. D., Detroit, Mich.

Chattanooga Iron & Wire Works, Chattanooga, Tenn.

Chesapeake Iron Works, Baltimore, Md.

Dow Wire and Iron Works, Louisville, Ky.

Ohio Elevator & Machine Co., The, Columbus, O.

Roanoke Iron Works, Inc., Roanoke, Va.

Schreiber & Sons Co., The L., Cincinnati, O.

Sned Architectural Iron Works, Louisville, Ky.

Southern Wire & Iron Mfg. Co., Dallas, Tex.

Oxy-Acetylene Welding and Cutting outfit and Supplies.
International Oxygen Co., New York, N. Y.

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Packing. (Asbestos, Metallic, Rubber, Leather, etc.)
American Huhn Metallic Packing Co., New York, N. Y.

Paint. (Bridge.)
Dixon Crucible Co., Jon., Jersey City, N. J.

National Roofing Co., Tonawanda, N. Y.

N. J. Car Spring & Rubber Co., Jersey City, N. J.

Power Specialty Co., New York, N. Y.

Paint. (Bridge.)
Dixon Crucible Co., The, Jersey City, N. J.

Wilhelm Co., A., New York, N. Y.

Paint. (Cold Water.)
Wilhelm Co., A., New York, N. Y.

Paint. (Metal Preservative.)
National Roofing Co., Tonawanda, N. Y.

Wilhelm Co., A., New York, N. Y.

Paint. (Roofing, Building, etc.)
Armitage Mfg. Co., The, Richmond, Va.

Baldwin Mfg. Co., Philadelphia, Pa.

Cameron & Barkley Co., Charleston, S. C.

Southern Lime & Cement Co., Charleston, S. C.

Standard Roofing Co., Tulsa, Okla.

Thompson & Co., Pittsburgh, Pa.

Wilhelm Co., A., New York, N. Y.

Painting. (Contractors for Bridges, Buildings, etc.)
Dinaco & Bro., A., Pittsburgh, Pa.

Paint-Making Machinery.
Lyne Superior Co., The, Cincinnati, O.

Paper. (Roofing, Building, Sheet, etc.)
Armitage Mfg. Co., Richmond, Va.

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Ads. marked † appear in first issue of
the month.
Ads. marked ‡ not in this issue.

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American Mfg. Co.	90	Clinchfield Coal Fuel Co.	2	Golding, John, care of Manufacturers Record	91	Texaco Transportation Co.	1	Texaco Transportation Co.	1
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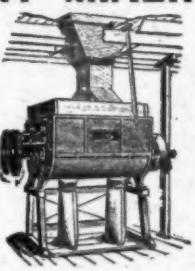
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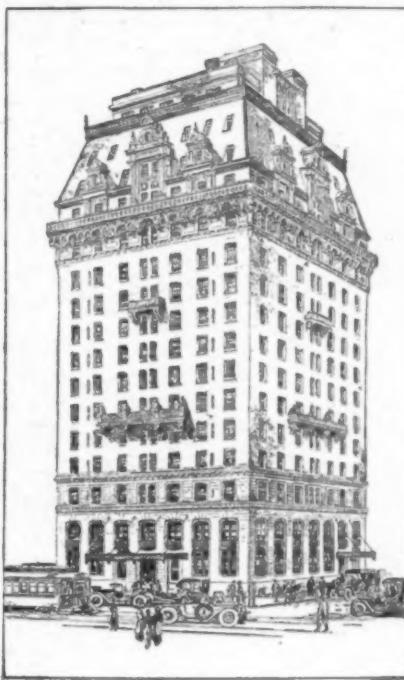
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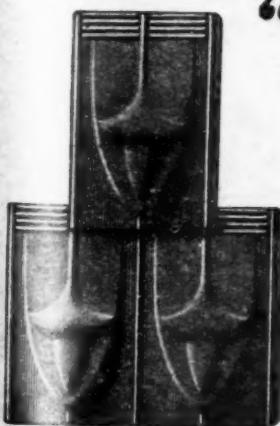
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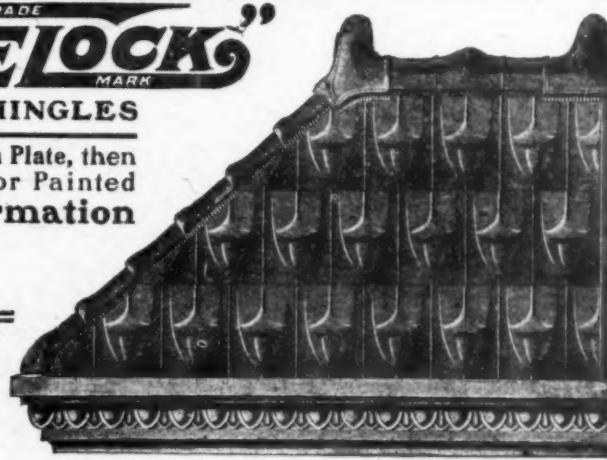
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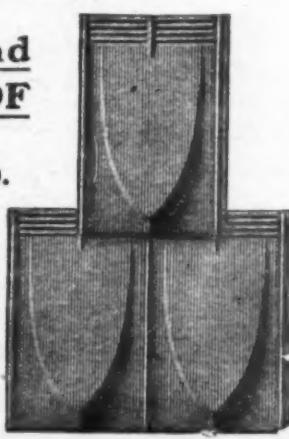


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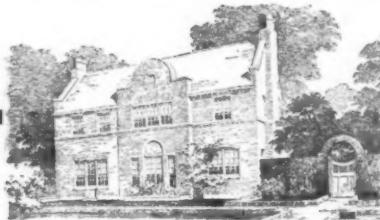
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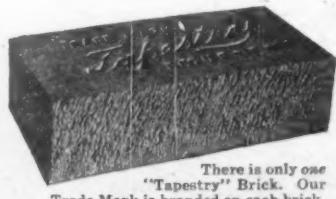
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